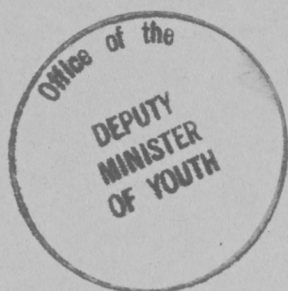


ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE
OF THE
PROVINCE OF ALBERTA
FOR THE YEAR
1966



PUBLISHED BY THE ORDER OF THE LEGISLATIVE ASSEMBLY

EDMONTON, ALBERTA
Printed by L. S. WALL, Queen's Printer for Alberta
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TO HIS HONOUR,

J. W. GRANT MacEWAN,

Lieutenant Governor of the Province of Alberta.

Sir:

I have the honour to submit herewith the Report of the
Department of Agriculture for the year 1966.

I have the honour to be, Sir,

Your obedient servant,

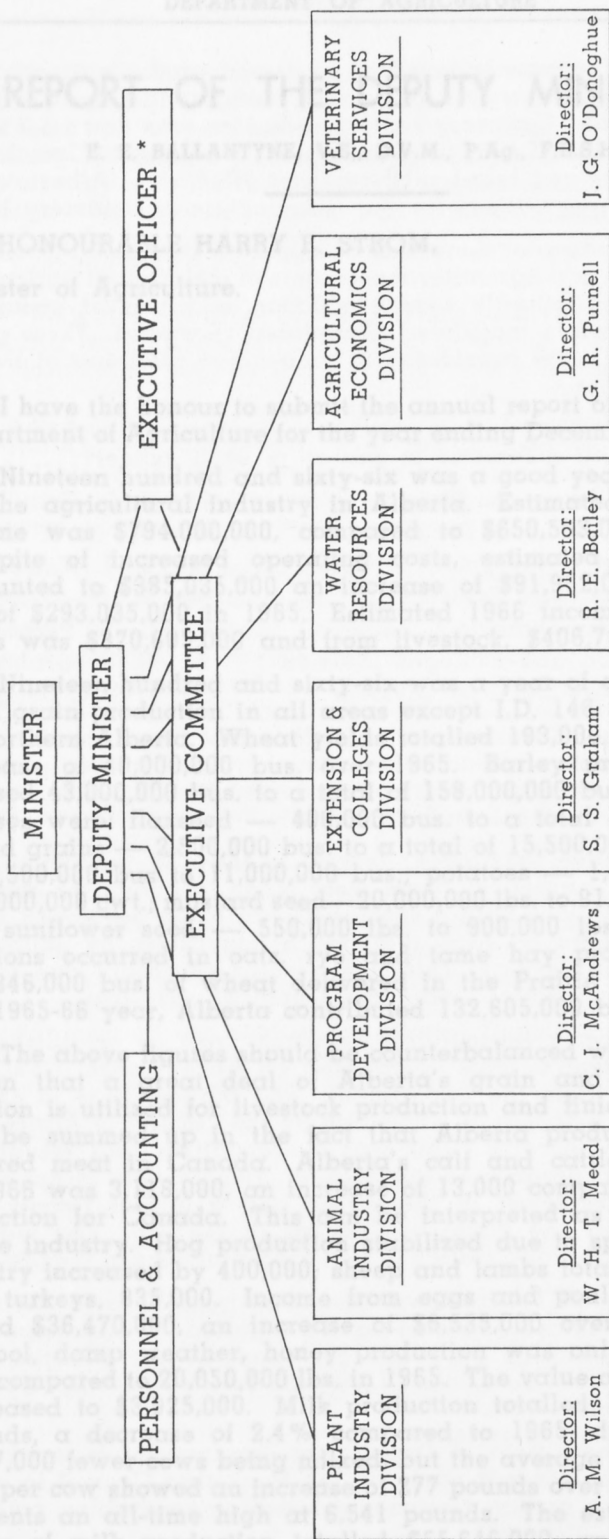
HARRY E. STROM,

Minister of Agriculture.

ORGANIZATION

Minister of Agriculture	Hon. H. E. Strom
Deputy Minister	Dr. E. E. Ballantyne
Director, Agricultural Economics Division	Dr. G. R. Purnell
— Farm Management Branch, Supervisor	A. R. Jones
— Production Research Branch, Supervisor	B. J. McBain
— Statistics Branch, Supervisor	R. E. English
— Rural Development Branch, Supervisor	V. T. Janssen
— Alberta Farm Purchase Board, Chairman	K. Taylor
Director, Animal Industry Division	W. H. T. Mead
— Dairy Branch Commissioner	D. H. McCallum
— Livestock Branch Commissioner	W. C. Gordon
— Poultry Branch Commissioner	Robt. H. McMillan
Director, Extension & Colleges Division	S. S. Graham
— Extension Branch, Director	S. S. Graham
— Colleges Branch, Director	J. E. Hawker
Director, Plant Industry Division	A. M. Wilson
— Field Crops Branch, Head	O. G. Bratvold
— Weed Control Branch, Head	W. Lobay
— Soils Branch, Head	A. Goettel
— Crop Protection & Pest Control Branch, Head	J. B. Gurba
— Horticulture Branch, Head	P. D. McCalla
Director, Program Development Division	C. J. McAndrews
— Agricultural Products Marketing Council, Chairman	D. H. McCallum
— Land & Forest Conservation & Utilization Committee, Chairman	H. W. Thiessen
— Area Rehabilitation & Development Administration Director	G. R. Sterling
— Official Trustee & Colonization Manager Official Trustee	C. J. McAndrews
Director, Veterinary Services Division	Dr. J. G. O'Donoghue
— Veterinary Services Branch, Director	Dr. J. G. O'Donoghue
— Fur Farms Branch, Supervisor	R. W. Gillies
Director, Water Resources Division	R. E. Bailey
— Chief Engineer	W. Solodzuk

ALBERTA DEPARTMENT OF AGRICULTURE



- Notes: 1. All Divisions based on a common denominator of enterprise
 2. All Divisions headed by a Director
 3. Executive Committee made up of the 7 Division Directors
4. Science, programming & regulatory functions on subject matter kept together
 5. Scientific & business principles adhered to — 7 operational heads reporting to Deputy instead of 15

* Deferred

REPORT OF THE DEPUTY MINISTER

E. E. BALLANTYNE, V.S., D.V.M., P.Ag., F.R.S.H.

The HONOURABLE HARRY E. STROM,
Minister of Agriculture.

Sir:

I have the honour to submit the annual report of the Alberta Department of Agriculture for the year ending December 31, 1966.

Nineteen hundred and sixty-six was a good year in general for the agricultural industry in Alberta. Estimated farm cash income was \$794,000,000, compared to \$650,563,000 in 1965. In spite of increased operating costs, estimated net income amounted to \$385,035,000 an increase of \$91,962,000 over the net of \$293,035,000 in 1965. Estimated 1966 income from field crops was \$370,605,000 and from livestock, \$406,762,000.

Nineteen hundred and sixty-six was a year of exceptionally good grain production in all areas except I.D. 146 and I.D. 147 in northern Alberta. Wheat yields totalled 193,000,000 bus., an increase of 40,000,000 bus. over 1965. Barley production increased 43,000,000 bus. to a total of 158,000,000 bus. Other increases were: flaxseed — 400,000 bus. to a total of 5,300,000; mixed grains — 2,500,000 bus. to a total of 15,500,000; rapeseed — 1,500,000 bus to 11,000,000 bus.; potatoes — 1,000,000 cwt. to 4,000,000 cwt.; mustard seed—20,000,000 lbs. to 81,000,000 lbs.; and sunflower seed — 550,000 lbs. to 900,000 lbs. Slight reductions occurred in oats, rye and tame hay production. Of 567,346,000 bus. of wheat delivered in the Prairie Provinces in the 1965-66 year, Alberta contributed 132,605,000 bus., or 23%.

The above figures should be counterbalanced with the realization that a great deal of Alberta's grain and forage production is utilized for livestock production and finishing, which can be summed up in the fact that Alberta produces 30% of the red meat in Canada. Alberta's calf and cattle population in 1966 was 3,118,000, an increase of 13,000 compared to a 2% reduction for Canada. This can be interpreted as faith in the cattle industry. Hog production stabilized due to specialization; poultry increased by 400,000; sheep and lambs totalled 333,000; and turkeys, 835,000. Income from eggs and poultry meat totalled \$36,470,000, an increase of \$6,535,000 over 1965. Due to cool, damp weather, honey production was only 12,540,000 lbs. compared to 20,050,000 lbs. in 1965. The value of fur farming increased to \$3,925,000. Milk production totalled 1,602,515,000 pounds, a decrease of 2.4% compared to 1965, due primarily to 17,000 fewer cows being milked, but the average milk production per cow showed an increase of 277 pounds over 1965 and represents an all-time high at 6,541 pounds. The estimated farm value of milk production totalled \$55,646,000, an increase of \$4,382,000 over 1965, which is an all-time high. The estimated

plant value of manufactured or processed products amounted to \$61,656,000, another new high value, being an increase of \$3,426,000 over 1965. Creamery butter production was down 5.7%, but over 97% of the 34,478,000 pounds produced graded "Canada First Grade". Fifty and four-tenths per cent (50.4%) of Alberta's milk production was utilized for the manufacture of creamery butter.

During the year there was an apparent increasing awareness in important non-agricultural segments of society that agricultural production is actually food production which is of paramount importance when considered on a global viewpoint. These global implications were considered in long-range planning of Department activities.

Effective April 1, the Department was re-organized into seven Divisions with a Director in charge of each, namely:

Water Resources Division	Mr. F. L. Grindley*
Animal Industry Division	Mr. W. H. T. Mead
Program Development Division	Mr. C. J. McAndrews
Plant Industry Division	Mr. A. M. Wilson
Economics Division	Dr. G. R. Purnell
Extension and Colleges Division	Mr. S. S. Graham
Veterinary Services Division	Dr. J. G. O'Donaghue

The seven Directors and myself formed the Executive Committee to decide on Department administrative matters, planning, etc. This business procedure was adopted from industry, as agriculture is a business and a science.

To improve Department service to those in production, processing and marketing, plans were made to divide the province into seven regions with a specialist staff to be developed in the next few years at each regional headquarters as support to the Extension Service. This was deemed necessary due to production specialization and rapid technical advances.

The Alberta Agricultural Research Trust as established by the Department became operational on April 1 with a \$500,000 contribution from the Department. The purpose was to expand agricultural research as carried on by the Faculty of Agriculture, University of Alberta. This was a recognition that research is necessary for progress in agriculture. Twenty new research projects were approved in the spring and a further twenty-three authorized by the Board of Trustees in the fall. The majority have a practical application in resolving problems in the province.

A Livestock Program was issued as guidelines for technical and field services expected to be required for an expanding livestock population by 1980. For example, the Alberta cattle population could be 4,500,000 by that date based on projections on food requirements.

In the new field of Department involvement in marketing, excellent progress was made by the Marketing Council in establishing Boards or Commissions for handling vegetables, potatoes, broilers and turkeys.

* Passed away in July. Mr. R. E. Bailey promoted to Director position.

The Rural Development pilot project in C.D. 14 under the ARDA Branch of the Program Development Division became established and steps were taken to have staffing, programming, etc. fully operational as required. An excellent and encouraging response by all Departments and agencies involved can be reported. The research phase was expanded into C.D. 12, and plans made for similar studies in C.D. 15 to be conducted by the Economics Division.

The water resources of the province received a great deal of attention in the fields of jurisdiction, irrigation, drainage, planning, data collection and the many services provided.

Final planning for the Consolidated Agricultural and Wildlife Laboratory was completed, with construction to commence in 1967. This added expansion to the scientific core of the Department will be of great value to formulating and evaluating Department policy and services.

Due to Department requirements, a program of expanded facilities at the Horticultural Station, Tree Nursery and Agricultural and Vocational Colleges was undertaken, with the latter amounting to several millions of dollars. This was due to the emphasis on education for the training in managerial ability and technical knowledge required for food production, agribusiness and marketing.

A great deal of advancement was made in all Department functions and activities which was of value in the current year and for long-term planning for the future development of agriculture in the province and the conservation of resources for the benefit of the total society and the total economy. Details are recorded in the reports of the respective Divisions. As specialists from one Division provide technical services to others, some duplication of reporting may occur, but there was no duplication in the work performed or in staffing. For example, the Economics Division carried out studies for several Divisions; and the Animal Industry Division did residue analyses for other Divisions and other Departments of the Provincial and Federal Governments, etc. This co-ordination of effort was essential to efficient operation.

I wish to express my appreciation to you for your guidance and counsel and to the staff members of the Department for their high calibre of service in conducting the many programs of the Department.

Finally, on behalf of all the members of our staff, I wish to acknowledge and express sincere appreciation to everyone who assisted the Department with the work undertaken on behalf of the progress of agriculture in Alberta.

Respectfully submitted,

E. E. BALLANTYNE,

Deputy Minister.

Report of the Agricultural Economics Division

1966

G. R. PURNELL, B.Sc., M.Sc., Ph.D., P.Ag. — Director

Farm Management Branch:

A. R. Jones, B.Sc., M.Sc., P.Ag., Head
L. Bauer, B.Sc., M.Sc., P.Ag., Assistant Head
J. Gorr, B.Sc., Economic Data Analyst
B. A. Hackett, B.Sc., Agricultural Economist
M. A. Cameron, B.Sc., P.Ag., Regional Economist,
Lethbridge
C. J. Roth, B.Sc., P.Ag., Regional Economist, Calgary
G. R. Keay, B.Sc., P.Ag., Regional Economist, Fairview

Production Research Branch:

B. J. McBain, B.Sc., P.Ag., Head
K. D. Porter, B.Comm., P.Ag., Assistant Head
K. Elgaard, B.A., Resource Development Economist
G. B. Parlby, B.Sc., Resource Development Economist
R. J. Miller, B.Sc., P.Ag., Agricultural Economist
W. M. Bayda, B.Sc., P.Ag., Agricultural Economist

Statistics Branch:

R. E. English, B.S.A., M.S.A., Agricultural Statistician
T. L. Williams, B.Sc., M.Sc., Assistant Agricultural
Statistician

Rural Development Branch:

V. T. Janssen, B.Sc., P.Ag., Head
K. A. Svenson, B.A., Assistant Head
W. R. Meeks, B.A., Sociologist

Alberta Farm Purchase Board:

K. G. Taylor, B.Sc., P.Ag., Chairman
P. D. Stanley, B.Sc., P.Ag., Agricultural Consultant

A. GENERAL

Reorganization of the Department of Agriculture amalgamated the Farm Economics Branch and The Alberta Farm Purchase Board into the Economics Division. This arrangement improves liaison between these two bodies with common objectives.

The role of the Economics Division continued to emphasize three areas of concern: 1. Extension advisory assistance to farmers in collaboration with other field staff and specialists in the Department; 2. Advice and counsel to Governmental officials on the economic implications of various existing or proposed policies or programs; and 3. Collection, analysis and dissemination of research data necessary to a more thorough understanding of agricultural trends, outlook, adjustments, and social and economic development.

Increasing recognition of the effective role of agricultural economists and rural sociologists was very discernable in 1966. Individual farmers, general farm organizations, commodity groups, agri-business firms, professional personnel and officials of various governmental departments all exhibited interest in collaborating with Division personnel and programs.

Recruitment of qualified staff continued with various difficulties encountered. The demand for new knowledge necessitated the establishment of extra positions in rural development research, and resource development research. Regionalization of the program continued. The emphasis on analytical techniques saw the employment of an Assistant Statistician and Economic Data Analyst. The post as Head of Marketing continues to be vacant while the Assistant Head position was vacated upon the transfer of the incumbent to the Regional Economist post at Fairview.

A brief outline of the work of the six operating branches of the Division is presented below.

B. FARM MANAGEMENT BRANCH

Farm Business Analysis Groups:

The source of the income problem in the farm business may be in its size, in the working capital, in its capital turnover, in a specific crop or livestock enterprise, in the use of labor, in having land or machinery or buildings that are too greatly limited to output and so on. The business analysis locates the trouble spot and then indicates the action program needed to boost farm income.

Over 400 commercial farm operators in 35 district agriculturists' areas use the business analysis to dig out the basic information needed to guide the production and sale of their farm products. The Farm Business Reports were issued for the first time on the basis of soil zone. A total of seven reports were issued and 6,400 copies mimeographed and distributed through the Extension Service. Unfortunately there were not enough farm businesses analyzed in either the brown soils of south eastern Alberta or the grey soils of northern Alberta to justify reports for these areas.

1966 marks the first year that farm records were processed on the electronic computer. The time saved in processing the records was used to make farm visits to the majority of the farm operators prior to May 1st and explain the analysis results and draw up the action programs for the year. Farm visits were made by the district agriculturist and a member of the Farm Management Branch. This team approach arose as a direct result of requests of the farm operators and the district agriculturists. The response was considerably greater than anticipated. The team approach permitted all to see the problem, examine alternatives and to select a course of action acceptable to the operator. These farm visits were extremely well received by the farm families and they have done much to spread the influence of the farm management program.

Computer Use in Several Economic Studies:

Farm operators throughout Alberta are anxious to know where to invest in their farm business and at what level. The records from members of the farm business groups were used in regression analyses to provide some general guidelines. Major studies and analyses undertaken were as follows: 1. Labor-machinery substitution, 2. Changes in machinery investment as the percentage of fallow decreases and percentage of cereal crops increases, 3. Determination of the net farm income which can be attributed to land, 4. Regression analysis on cow-calf, feeder cattle and swine enterprises, 5. Analysis of both the foothills and short grass ranching operations, 6. Changes in revenue, variable costs, investment and total costs as farm size is increased for each major soil zone in the province. The results were used in the preparation of material for short courses, conferences and bulletins released by the Division.

Central Alberta Study on Farm Size:

Farm size was defined as the number of productive man units on the farm. The data of the farms were analyzed using a Cobb-Douglas function. From these functions it was possible to determine the behavior of net income, labor earnings and return to investment with increases in size and in investment. It appears that in all cases these three measures of income are increasing at an increasing rate. If one defines an economic unit as a farm business which has an average return to capital greater than the alternative opportunity for investment, it is possible to determine the lower size limit of these particular units. It would seem that the start of an economic unit in Central Alberta is in the vicinity of 500 productive man work units or \$80,000 capital investment. It is planned to carry out similar studies for other soil zones in the province so that each area will know what an economic unit is for their area.

A New Approach to Teaching Farm Accounting:

Most farmers would rather do almost anything other than keep farm records. There is a mystery to keeping farm records which needs to be dispelled. A new system was developed for teaching farm accounting principles. Its essential feature is that it relieves the audience of laborious, time-consuming arithmetic and allows them to concentrate on the flow of revenue and expenditures through the farm accounts. This new method has been well received by farmers and credit advisors and will be used in the future meetings.

Livestock Analyses:

Many operators in the farm business program are anxious to increase their net income from livestock. In some cases the margin per unit is too low and in others the volume is not high enough to pay all the costs and leave some pure profit. They requested detailed information which would enable them to correct weaknesses in the livestock section of their business. This resulted in the detailed cow-calf enterprise analysis, beef-feeder

enterprise analysis and hog enterprise analysis activities in 1966. Special forms were prepared to transfer and analyze data from the farm business analysis sheets. The analyses of these enterprise records led to a release of 2,500 copies of the publication "1965 Alberta Cow-Calf Enterprise Analysis". The data for the feeder and hog enterprise analysis has been tabulated. The results are being interpreted and publications on these two topics will be released early in 1967.

The 1965 Alberta Cow-Calf Enterprise Analysis:

The purpose of this publication was to describe the returns and costs of cow-calf enterprises in various parts of Alberta, indicate the variations in costs and returns and to observe the effect of enterprise size on returns, costs and efficiency levels.

It was found that differences in financial success were due to the percentage calf crop attained, the weight and value of each calf weaned and the feed cost per cow wintered. The amount of roughage fed per cow was the cause of much of the difference in profit made. As the size of the cow-calf enterprise increased the hours of labor and labor cost per cow decreased. Feed costs and other variable costs per cow did not decrease as the herd size increased. Wide differences in percentage calf crop, in weaning weights, and feed cost per cow existed. These three types of problems can be corrected. Suggestions on how to correct these problems were included in the bulletin. This latter material was prepared by specialists in the Animal Industry Division. In an effort to help livestock operators make adjustments, a section on enterprise planning was also included in the publication.

Estate Planning, Partnerships, Incorporation and Insurance:

There continues to be a very strong demand from farmers, insurance representatives and lawyers for information on estate planning, partnerships and incorporations. Meetings held throughout the province are well attended and generate requests for individual assistance to help complete an overall estate plan. Material was prepared and distributed to meet this demand. This topic formed the basis of the Friday T.V. program "This Business of Farming". It has been necessary to call on lawyers, trust officers and insurance representatives to assist with these requests. The majority of the representatives of these companies are looking for ideas on how to help farm families in making business arrangements. This is a relatively new field of endeavor for them. In the past they have been dealing mainly with non-rural families and what works for these people is generally inappropriate for farm families. Courses for lawyers and insurance representatives who are working with farm families will be presented in the new year.

Farm Financial Management Bulletin:

To aid farm operators in the financial management of their farm business, material was prepared on how to start in farming, how to determine capital requirements, how to provide the capital, how to prepare the information which credit granters want, how to

project expenses and receipts and how to finance for expansion. This material was prepared for publication and will be ready for release early in 1967. A more concise bulletin on credit outlines the credit management principles, sources and requirements. This will also be released in the new year.

V.L.A. Credit Officers Training in Accounting and Business Analysis:

Farmers receiving credit under V.L.A. have requested that their records be analyzed by the Farm Management Branch. This necessitated training sessions for their personnel in farm accounting and business analysis. In 1967 about 50 of their farms are to be analyzed by this Branch. Additional farmers will come under the business analysis program in 1968.

Bankers' Farm Finance Conference:

Rural bankers are interested in serving their farmer clients better. They felt that they would help farmers more if they knew what an economic unit was, the costs and returns on different sized crop and livestock enterprises and what the various credit agencies were offering in the way of credit. They also requested that they be taught the farm management principles and shown how to get the physical and financial information from the farm business reports so that they could figure out just how much good extra funds loaned to farmers would be. In a joint effort with the Extension Department of the University of Alberta the necessary material was prepared and presented to bankers and representatives of the leading credit granting agencies. The first conference was held in December at Edmonton. Other conferences are planned for Calgary and Grande Prairie in the new year.

Farm Young People's Farm Management Course:

For the past four years the University of Alberta has counted on the Farm Management Branch to give the farm accounting and management course during the Farm Young People's Week. The popularity of the course has grown rapidly.

Publications and Mimeographed Material:

In response to requests by farm operators, district agriculturists and agricultural specialists, and for presentation at agricultural meetings, the following material was researched and prepared.

1. Estate Planning for Security
2. Estate Planning
3. Partnerships and Father and Son Operating Arrangements
4. Partnership Operating Agreement Form
5. Farm Management Principles for Commercial Farm Operators
6. Economics of Beef Feed Lot Production

7. Returns and Costs on Alberta Livestock Enterprises
8. An Economist's Approach to Farm Accounting
9. A Comparison of Farms in Alberta by Region and Size
10. 1965 Alberta Cow-Calf Enterprise Analysis

Regional Economists' Activities:

Three of the four regional economists positions have been filled. Lethbridge, Calgary and Fairview offices are providing detailed assistance to district agriculturists and individual farmers. Extension personnel, key personnel from other departments of government and business leaders have made rather intensive use of the regional economist in determining area economic problems in doing benefit cost analysis for grazing and drainage in area surveys and specific crop surveys. In addition to this work the regional economists handle meetings and individual requests on accounting, business analysis and management, farm business arrangements, economics of crop and livestock production, and machinery use.

Statistical Summary — Farm Management Branch:

Farm Management Meetings	236
Consultations in offices or on farms	811
Farm Business Reports Issued	7
Radio, T.V., Press Articles	58
Subject Matter Publications	10
Phone Calls In	5,200 (est.)

C. PRODUCTION ECONOMICS RESEARCH BRANCH

Studies Currently Underway:

A three year sugar beet study was launched in the spring of 1966. Initial calls were made by executive members of the Sugar Beet Growers Association to insure the fullest possible co-operation of the farmers selected. This was followed up by a visit from an economist from this Branch in early summer to give assistance and instruction in making entries in the specially prepared schedules.

The new area of studies in Resource Use for the Division of Water Resources commenced intensive cost-benefit evaluations in the Red Deer Diversion scheme and later in the year made a start on appraisals of flood damage by the Bearberry Creek to farm land and the town of Sundre. The studies of a second river basin were also undertaken because the Branch was fortunate in obtaining an additional trained resource economist. This second project is that of the Highwood-Stimson-Willow Creek.

Resource use studies are now also underway for the Department of Lands and Forests. A priority list has been established covering ten items ranging from evaluations of home-steading policy to studies on credit, to rental rates for such items as grazing, cultivated leases, gravel leases as well as a continuation of land value studies.

Vegetable Studies:

A report was published covering the three years of the economics of producing four of the major fresh vegetable crops.

The following table lists a summary of the findings of the cost data.

TABLE I
COST DATA (Per Acre)

		Fresh Corn	Fresh Carrots	Canning Carrots	Turnips	Onions
CONSIDERATION OF TOTAL COSTS						
Size of Enterprise	(acres)	14.86	11.03	13.52	29.67	10.02
Saleable Yield	(lbs.)	6,719	20,468	29,587	17,627	15,284
Value of Crop Sales	(\$)	183.59	905.41	295.88	591.81	624.16
Value of Other Income	(\$)	3.48	7.44	10.83	15.02	0.24
Cost of Prod. (End/Harvest)	(\$)	119.57	413.05	178.73	311.46	312.91
Cost of Marketing and Storage	(\$)	—	289.71	4.58	173.59	105.58
Total Cost of Production	(\$)	119.57	702.76	183.31	485.05	418.49
Net Returns to Mgm't and Risk	(\$)	67.50	210.09	123.40	121.78	205.91
CONSIDERATION OF CASH COSTS ONLY						
Cash Expense	(\$)	71.98	431.22	97.11	319.67	212.81
Non-Cash Costs per Acre	(\$)	47.59	271.54	86.20	165.38	205.68
Net Returns	(\$)	67.50	210.09	123.40	121.78	205.91
Gross Cash Margin	(\$)	115.09	481.63	206.77	287.16	351.67
FIELD OPERATIONS						
Field Operations (hr/acre)	(hrs.)	71.14	209.78	88.19	219.62	241.34
Field Operations (cost/acre)	(\$)	70.10	268.98	125.33	214.44	204.72

The average break-even points, as analyzed on the basis of saleable yield and the average of all cost (including a management charge — 5% of gross receipts), were as follows:

- (1) Fresh Corn — 19.2¢ per dozen
- (2) Fresh Carrots — 3.6¢ per lb.
- (3) Turnips — 2.9¢ per lb.
- (4) Onions — 2.9¢ per lb.

Out of the 56 accounts analyzed during the period of study, there were only eight occasions in which a Net Loss was sustained. Three of these occurred with Carrots, two with Onions, one with Turnips and two with Fresh Corn.

Interviews were initiated with people in the vegetable trade in respect to the Outlook Study of the Fresh Vegetable Industry. Meetings in co-ordination of this study were held several times with the Plant Industry Division and the Department of Industry and Development. Frequent communications and exchanges of data occurred throughout the year. Assistance in respect to the functioning of the vegetable industry was sought and received from the Federal and Provincial Governments the University of Alberta, the vegetable growers, the wholesalers, the processors and other representatives of the industry. At the end of the year the data were in process of analysis with the completion of the report expected in early 1967.

Data respecting the establishment of additional experimental vegetable storage at the Brooks Horticultural Station was provided for the government. Field trips in reference to this and to the outlook concerning the Fresh Vegetable Feasibility Study were carried out.

Dairy Cost Studies:

Early in the year Provincial Milk Hearings were held. Evidence on the costs of production for the areas of Edmonton, Red Deer, Calgary, Lethbridge and Medicine Hat was given

by B. J. McBain at these hearings. The Board of Public Utility Commissioners later announced their decision of a 50 cent per hundredweight increase to the producers for Class One milk.

Following the Milk Hearings the usual personal reports on production costs and returns were issued to each dairyman on study, and a personal explanation of the results was made by a fieldman.

To maintain a sufficient number of farms on survey, over 25 additional names were drawn at random at the Milk Control Office. Those selected were interviewed and assisted with the keeping of their accounts.

Resume of Changes over Previous Year:

Labor problems continued to be of increasing difficulty for the dairy farmer. The labor rate increased from \$276 to \$296 per month including house and other items supplied, but less qualified labor was available. The average number of men per farm remained at two even though the number of cows milked increased. There was a shift to more family labor to compensate for the shortage of hired labor. Many of the farmers complained that the operator and family help were also having to make up for the lower quality of work now offered by the hired worker.

Capital investment increased from a little over \$85,000 to slightly under \$100,000 which in turn increased the operator's interest and depreciation charges.

Feed fed per cow equivalent was 3.8 tons of roughage as compared to 3.5 tons the previous year. Concentrate fed was 2,892 lbs. compared to 2,949 lbs.

Milk production per cow showed a drastic drop of 423 lbs. The past two severe winters have had a detrimental effect which caused additional stress on feed supplies, animal health, breeding problems and consequently on the operator's management and labor problems.

The following table from the latest report will indicate some trends in the Dairy Enterprise.

TABLE II
DAIRY ENTERPRISE COST ANALYSIS
ALBERTA DAIRY COST STUDY
May 1, 1965 to April 30, 1966

Edmonton Whole Milk Farms	Group Average 1964 - 65	Group Average 1965 - 66	Your Farm 1965 - 66
Nnumber of Farms	25	24	
Dairy Receipts per Farm			
Value of Milk Sales per farm	\$17,302	\$17,684	
Value of Milk used in house per farm	236	269	
Value of Credits to Dairy Herd per farm ¹	2,823	2,532	
Total Receipts	20,361	20,485	
Dairy Cost per Farm			
Feed Cost at farm market value (including pasture)	9,629	9,356	
Labor Cost ²	3,559	4,487	
Overhead Cost (depreciation & interest)	1,997	2,270	
Other Costs (Marketing, Milkhouse supplies, etc.)	3,234	3,362	
Total Costs	18,419	19,475	
Net amount left for profit and management after charging custom rate per hour for dairy labor	1,942	1,010	

¹ Credits to dairy herd are value of herd at the end of the year plus sales of cattle, plus cattle butchered, less value of herd at the beginning of the year and less purchase of cattle. Herd credit also covers milk fed to calves.

² Rate used is based on actual wages paid hired help. However, on farms which employ no hired help the rates for married hired labor on the study apply to family and operator's time on dairy chores.

Sugar Beet Study:

Following requests of the Sugar Beet Growers Association a fairly large study of the Sugar Beet enterprise got underway.

A sample of 120 farms was drawn at random from the 1,200 growers. The Growers Executive gave assistance by making the initial calls to the selected farms to provide account books and to get the farmers' approval to co-operate.

Visits were made to the selected farms by staff from this Branch in the summer for the purpose of giving assistance in laying out the method of recording the necessary information. Calls were made in November again to record the remaining costs and sugar beet yields.

Farm Labor Housing Survey:

This was a special survey requested by the Minister. A questionnaire was designed and the additional data were obtained from farms visited for the Milk Studies, Sugar Beet Study and the Land Levelling Study. Information on labor rates being paid for 1966 was recorded as well as evaluations made of the living perquisites being provided the worker.

Additional Activities:

1. Members of Advisory Boards and Committees:

B. J. McBain — member of a special Advisory Committee to the Minister on the subject of context for a Land Appraisal Course now being offered at Colleges of Agriculture.

K. D. Porter — member of an Advisory Committee on the establishment of an Indian Reservation Vegetable Project.

G. B. Parlby — Secretary to the Irrigation Planning Board.
— Secretary to the Irrigation Policy Advisory Committee.

2. Office interviews and data were supplied to many individuals as well as consulting advice and information to occupational, professional and educational fields.
3. Members of the Branch took part as related to their field of endeavor in various meetings, talks, lectures and seminars throughout the year.
4. Assisted with Socio-Economic Study in conjunction with ARDA Branch.
5. An investigation into variations in milk production and price fluctuations.
6. Assisted with farm calls to open farm accounts for potato growers, in conjunction with Farm Management Branch.
7. Designing and drawing many graphs, charts and tables for most of the branches in the Division.

Reports Published in 1966:

Edmonton Dairy Farm Business Summary	— B. J. McBain
Calgary Dairy Farm Business Summary	— B. J. McBain
Production Economics of Fresh Vegetables	— K. D. Porter
An Analysis of the Structure of Irrigation Administration in Southern Alberta	— G. B. Parlby
Summary of Pea Study	— Miller, Porter, McBain
Land Levelling Study	— R. J. Miller
Machine Use Cost Schedules	— Miller, Porter
Farm Labor Housing Evaluation	— Miller, McBain
Paper on Results of a Ranch Study to Cattleman's Management Course at Banff	— K. Elgaard

D. STATISTICS BRANCH

The responsibilities of the Statistics Branch of the Division increased during 1966. The additional work involved made additional staff necessary. Fortunately the position of Assistant Supervisor, vacant for some time, was filled when Thomas L. Williams reported for duty on January 2.

Federal-Provincial Conference:

The Supervisor and Assistant Supervisor of the Branch attended the Federal-Provincial Conference on Agricultural Statistics held at Ottawa, February 22 and 23, 1966. The principal items on the agenda included a review of activities in the Dominion Bureau of Statistics and provincial offices, the crop reporting program and possible future developments, objective crop estimating in Quebec, Ontario and British Columbia, the uses and limitations of existing statistics for administering farm aid and as a basis for crop insurance, the need for statistics and the problem of securing them, and the 1966 census. Dr. H. C. Trelogan, Administrator, Statistics Reporting Service, United States Department of Agriculture, attended the conference. Mr. Trelogan addressed the conference on progress with new techniques, and the future direction and scope of collection systems in the United States.

Crop Reports:

Crop reports were issued at bi-weekly intervals — eleven in all — during the growing season. Crop summaries were issued to the press on alternate weeks. In addition reports on crop conditions were telegraphed for inclusion in regular Dominion Bureau of Statistics crop reports. The co-operation of the crop correspondents who made the service possible is hereby acknowledged.

Surveys:

For the third year the Statistics Branch was responsible for estimates of vegetable and potato production. The acreage devoted to the production of vegetables has remained relatively constant during the period. However, the estimated acreage in potatoes increased from 21,100 in 1964 to 26,000 in 1966. A widening of the market for Alberta potatoes, now extending into the central provinces of Canada and the Pacific Coast States, has provided the incentive necessary for expansion.

The Extension Service was again enlisted to assist in the cattle-on-feed survey. District Agriculturists enumerated the number of cattle-on-feed in commercial feedlots.

A high proportion of the forage crop seed produced in Canada is exported and the lack of information regarding available supplies early in the season results in unstable prices. In a move to probe for remedies, Alberta and Manitoba, in co-operation with the Dominion Bureau of Statistics, undertook to determine forage seed crop acreages and yields by means of a questionnaire mailed to producers. In Alberta the results obtained were promising and it is planned to continue the work. Ultimate success, however, will depend upon the number and accuracy of the questionnaires returned by producers.

In June the Supervisor of the Branch accompanied three members of the Agricultural Economics Division, Canada Department of Agriculture, on a tour of cattle feeding operations along the Pacific Coast, in Idaho, Montana and Alberta. Vern Miles of Lethbridge and Keith Acton of Vancouver, both of whom were on the tour, participated in a seminar held at Edmonton on December 9 for the purpose of reporting on and discussing the findings of the group.

E. RURAL DEVELOPMENT RESEARCH BRANCH

The primary function of the Rural Development Research Branch was to conduct socio-economic studies in the rural development areas of the province. The areas, designated by the Federal-Provincial ARDA authorities, were Census Division 14 in west-central Alberta and Census Division 12 in the north-east. Census Division 15, the Peace River area, was proposed for study but has not yet been approved. In addition the Rural Development Research Branch conducted an economic and social study of the Tangent area, near Peace River, to determine causes of low farm incomes. An investigation of the economic implications of lowering the level of Lesser Slave Lake was also conducted.

Census Division 14:

The inventory of human and physical resources, the analysis of these resources, and recommendations for development were completed during the second year of the study. The results were published in two volumes, one for distribution to lay people, and the other a more technical volume for use by government agencies and leaders of the community. The projected labor force

required in 1975 was calculated, showing the employment by industry and the required transfer from one sector of the economy to another. It is anticipated that all sectors with the exception of agriculture will require an expansion of employment, with forestry continuing to be the "prime mover" in the area.

The Branch also participated in discussions of the economic prospects with the Technical Panel. Assistance was given to the Resource Development Co-ordinator to assemble information on present agencies that could assist in rehabilitation.

Census Division 12:

Initial studies of Census Division 12 consisted of preparing a series of publications on the present resources of the area. Two bulletins have been published: Agriculture and Population Characteristics; while three others: Recreation and Tourism, Supporting Services, and Industry were withheld pending further data from the 1966 census. These bulletins were designed to provide background information for local government agencies and lay people. Supplemental data were collected by the Branch in a random sample of farmers. The interview part of the study was completed and results will be analyzed through the use of the computer.

Several meetings were held with the Agricultural Extension staff at which the functions of the Rural Development Research Branch were outlined and plans developed for future action.

Tangent Study:

At the request of local residents who indicated that the region was suffering from chronic low farm incomes, a study was conducted to investigate the socio-economic conditions of an area bounded by the Peace and Smoky Rivers, Highway 49, and Range 24. After seventy-three farmers were interviewed they were divided into low, medium and high groups according to their gross farm incomes. There was a high relationship between gross farm income, net farm income, family living income, size of farm, net worth, yield of wheat, and numbers of livestock per acre.

Suggested guidelines for improvement included incorporating rehabilitation and retraining programs into a farm enlargement or consolidation project, accelerating agricultural extension work, providing additional credit together with the dissemination of information on the use and availability of credit, and devoting additional considerations to a transition to consolidated schools.

Slave Lake Study:

Periodic rising of lake levels of Lesser Slave Lake has resulted in considerable flooding of land, damage to residential property and some instability to the local economy. Because of these factors, the local people requested a study to determine the feasibility of lowering the level of the lake. An exhaustive study was undertaken by the Rural Development Research Branch in co-operation with the Water Resources Division in the fall of 1966. Results of the study have not been finalized.

Irrigated Farm Study:

At the request of officials from the Prairie Farm Rehabilitation Administration at Vauxhall, the Economics Division participated in an investigation of rehabilitation problems of farmers who were moved by P.F.R.A. from Saskatchewan to the Hays area. The Rural Development Research Branch undertook the sociological aspects of the study. One of the major problems appeared to be the difficulty of operators to convert from dry land farming to irrigation conditions. In addition, while operators indicated a preference for farming, many would transfer to non-farm employment if suitable alternatives were available.

Members of the Branch also participated in the following:

1. Assisted in several leadership training courses.
2. Attended a seminar on Stimulants to Economic and Social Development in Slow Growing Rural Areas at Banff.
3. Attended a conference on Human Resources at Banff.
4. Presented a paper at the conference on Community Development at Fairview.
5. Addressed the Alberta Association of Town Planners.
6. Addressed several meetings of both technical and lay people in the rural development areas.
7. Presented a paper at a seminar at the University of Alberta.
8. Participated in discussions as a member of the Provincial Land Use Committee.

REPORT OF FARM CREDIT

ALBERTA FARM PURCHASE BOARD

K. G. TAYLOR, B.Sc., P.Ag., Chairman

H. ALLAM, P.Ag., Member

J. M. CURRIE, Member

P. D. STANLEY, B.Sc., P.Ag., Agricultural Consultant

A new approach to farm credit was taken during 1966 with the appointment of Mr. Stanley as Agricultural Consultant, to serve the needs of Alberta farmers who are purchasing land through the Board.

Farm Purchase Credit Act

During the fiscal year April 1, 1965 to March 31, 1966, the Alberta Farm Purchase Board approved 211 applications, committing a total of \$1,375,077.50 in Government loans.

There were 71 Advisory Committees operating at the end of 1966. The following is a list of the Counties, Municipal Districts and Improvement Districts which have formed Committees up to and including December 31, 1966, along with a listing of applications which have been handled by the Alberta Farm Purchase Board since its inception in 1957. The figure in brackets shows the number of applications submitted to the Board for the year 1966 only.

District	Applications submitted to Board	Approved	Rejected	Withdrawals	Hold for more Information	Value of Farm Lands	Government Loans to Board
Athabasca	63 (6)	44	12	7	.....	\$ 455,549.00	\$ 243,300.00
Barrhead	102 (24)	68	32	2	.....	987,700.00	503,200.00
Beaver	190 (18)	152	33	5	.....	1,954,868.80	895,883.44
Bonnyville	140 (35)	114	19	7	.....	1,178,363.65	678,139.12
Camrose	195 (13)	161	28	6	.....	2,322,565.00	1,153,510.00
Cardston	79 (6)	56	21	2	.....	787,505.90	368,444.46
Flagstaff	115 (10)	100	11	4	.....	1,241,925.00	629,545.00
Foothills	43 (2)	34	8	1	.....	599,908.00	272,880.00
Forty Mile	74 (8)	63	10	1	.....	851,723.27	425,316.63
Grande Prairie	71 (6)	54	14	3	.....	650,300.00	330,550.00
Kneehill	8 (7)	7	1	.....	.....	113,500.00	77,600.00
Lacombe	9 (1)	8	1	.....	.....	104,550.00	53,365.00
Lac Ste Anne	28 (.....)	15	11	2	.....	136,200.00	64,074.50
Lamont	179 (13)	146	25	8	.....	1,482,050.00	711,601.17
Leduc	167 (23)	153	11	3	.....	1,892,675.00	1,016,267.50
Lethbridge	102 (17)	63	37	2	.....	1,131,310.00	573,937.00
Minburn	123 (8)	88	28	7	.....	891,028.65	454,837.50
Mountain View	71 (3)	44	25	2	.....	732,220.00	363,150.00
Newell	14 (2)	9	5	.....	.....	118,900.00	54,610.00
Paintearth	157 (16)	142	11	4	.....	1,319,657.20	723,084.00
Peace	3 (.....)	2	1	.....	.....	29,000.00	14,500.00
Pincher Creek	16 (2)	11	5	.....	.....	231,442.00	114,750.00
Ponoka	127 (4)	88	29	10	.....	1,153,550.00	546,595.00
Provost	4 (3)	2	2	.....	.....	37,500.00	29,000.00
Red Deer	18 (13)	12	6	.....	.....	313,140.00	185,512.00
Rocky View	92 (9)	78	13	1	.....	1,275,437.95	618,457.95
Smoky Lake .....	(.....)	.....	.....	.....	.....	.....	.....
Smoky River	73 (15)	57	15	1	.....	540,080.00	275,400.00
Spirit River .....	(.....)	.....	.....	.....	.....	.....	.....
Starland	54 (.....)	47	7	.....	.....	561,972.00	272,195.00
Stettler	42 (8)	32	9	1	.....	498,854.20	266,850.00
Stony Plain	29 (3)	21	7	1	.....	295,500.00	140,708.21
St. Paul	76 (11)	58	16	2	.....	682,865.00	387,855.00
Strathcona	20 (1)	17	3	.....	.....	253,250.00	115,325.00
Sturgeon River	62 (6)	38	18	6	.....	566,970.00	275,275.00
Thorhild	86 (5)	65	18	3	.....	633,460.00	319,750.00
Two Hills	91 (4)	71	17	3	.....	511,900.00	252,200.00
Vermilion River	81 (9)	72	8	1	.....	889,792.00	479,696.00
Vulcan	113 (13)	98	12	3	.....	1,444,920.00	699,212.50
Wainwright	51 (9)	40	8	3	.....	585,200.00	339,582.61
Warner	37 (.....)	26	8	3	.....	435,369.50	191,344.75
Westlock	258 (30)	192	63	3	.....	2,273,516.00	1,183,031.00
Wetaskiwin	82 (20)	62	18	2	.....	899,100.00	498,750.00
Wheatland	27 (4)	23	4	.....	.....	378,250.00	184,200.00
Willow Creek	97 (10)	70	23	4	.....	1,197,756.00	610,354.50
Special Areas #2	111 (10)	99	9	3	.....	1,051,410.00	550,553.00
Special Areas #3	74 (5)	68	6	.....	.....	845,860.00	442,480.00
I.D. # 11	71 (12)	48	20	3	.....	784,995.20	349,930.00
I.D. # 22	7 (2)	2	4	1	.....	22,400.00	11,200.00
I.D. # 42 .....	(.....)	.....	.....	.....	.....	.....	.....
I.D. # 58	5 (.....)	2	3	.....	.....	29,000.00	14,500.00
I.D. # 65	84 (10)	52	28	4	.....	714,120.00	350,055.40
I.D. # 77	3 (1)	3	.....	.....	.....	52,700.00	31,000.00
I.D. # 78	14 (1)	7	7	.....	.....	25,250.00	11,575.00
I.D. # 95	7 (1)	2	5	.....	.....	17,000.00	8,500.00
I.D. #101	17 (2)	11	6	.....	.....	120,000.00	70,350.00

District	Applications submitted to Board	Approved	Rejected	Withdrawals	Hold for more Information	Value of Farm Lands	Government Loans to Board
I.D. #102	59 (2)	30	26	3	.....	164,200.00	79,280.00
I.D. #107	10 (5)	8	2	.....	.....	73,500.00	49,590.00
I.D. #108	3 (...)	2	.....	1	.....	15,500.00	7,750.00
I.D. #109	3 ( ... )	.....	.....	.....	.....	25,500.00	12,750.00
I.D. #111 .....	( ... )	.....	.....	.....	.....	—	—
I.D. #124	6 (...)	4	2	.....	.....	27,350.00	13,675.00
I.D. #125	18 (2)	12	6	.....	.....	92,500.00	44,950.00
I.D. #126	11 (2)	8	3	.....	.....	93,500.00	60,250.00
I.D. #131	7 (2)	4	3	.....	.....	41,500.00	24,700.00
I.D. #132	23 (3)	13	9	1	.....	167,500.00	102,650.00
I.D. #134	15 (2)	11	3	1	.....	68,000.00	35,000.00
I.D. #138	24 (4)	12	12	.....	.....	107,715.00	53,086.00
I.D. #139	8 (4)	4	3	1	.....	43,250.00	29,425.00
I.D. #146	5 (1)	1	4	.....	.....	6,000.00	3,000.00
I.D. #147	1 (...)	1	.....	.....	.....	4,900.00	2,450.00
TOTALS—71	4,055(468)	3,110	814	131	.....	\$39,234,974.32	\$19,952,539.24

Of the 3110 applications approved, 380 applications have been approved in 1966, with \$4,789,394.46 committed in loans for the twelve month period.

Advisory Committees have been formed in all areas of the Province with the exception of the Municipal Districts of: Taber, Acadia Valley and Fairview.

The Alberta Farm Purchase Board held 28 meetings during the year, and have met a total of 236 times since the Act was passed in 1957.

Farm Home Improvement Act

The Farm Home Improvement Act was passed in 1959. During 1966 a total of 14 loans were made with a total value of \$24,505.00.

A total of 297 loans valued at \$487,421.00 have been made under this Act since inception.

G. MARKETING BRANCH

Work in this branch was carried out at a minimal level due to shortage of staff. The agricultural outlook work was undertaken solely by the Statistics Branch. Prior to transfer to Fairview the Assistant Marketing Supervisor completed a study and report on egg production and on community pasture development. He also undertook a study of price fluctuations of major agricultural products. This report was nearing completion at year end.

In the absence of staff an egg marketing study requested by the Marketing Council was referred to the Federal Economics Branch who are carrying out the project co-operatively with the Alberta Economics Division. It is expected that similar requests will arise in the future and recruitment of personnel will make it possible to conduct this work through provincial channels.

Report of the Animal Industry Division

1966

W. H. T. MEAD, B.Sc., P.Ag., Director

DAIRY BRANCH

D. H. McCALLUM, B.S.A., P.Ag., Dairy Commissioner
R. P. DIXON, B.Sc., P.Ag., Assistant Dairy Commissioner
G. A. MacALLISTER, B.Sc., P.Ag., Supervisor, Dairy Plant Inspection
A. A. HUGHES, B.Sc., P.Ag., Supervisor, Dairy Cattle Improvement
E. S. BRISTOW, B.Sc., Asst. Supervisor, Dairy Cattle Improvement
V. W. KADIS, Ph.D., Director, Dairy Laboratory
L. H. ARNOLD, Supervisor, Frozen Food Plants
W. A. McGRATH, Dairy Statistics and Chief Clerk

REGIONAL DAIRY SPECIALISTS

Calgary City
W. E. Duncan, B.Sc., P.Ag.
Calgary Rural
L. C. Montgomery
Camrose
J. D. Rasmussen
Edmonton City
K. S. Anderson
Edmonton S.W.
J. R. Findlay, B.Sc.
Edmonton East
D. J. Prince

Edmonton N.W.
K. Spillar, B.Sc.
Fairview
K. J. MacDonald, B.S.A.
Lethbridge
A. O. Aspeslet
Red Deer
S. S. Paulsen
Vermilion
H. L. Beckett

LABORATORY SCIENTISTS

D. A. Hill, B.Sc., P.Ag.
O. J. Jonasson, B.Sc.
W. E. Breitreitz, B.Sc.

E. B. Casement, B.Sc.
R. V. Hodges, B.Sc.
C. E. Hughes, B.Sc.

LIVESTOCK BRANCH

W. C. GORDON, B.Sc., P.Ag., Livestock Commissioner
J. S. LORE, B.Sc., P.Ag., Livestock Supervisor (R.O.P. Beef)
R. A. REDDON, B.Sc., M.Sc., P.Ag., Livestock Supervisor (Swine & Sheep)
H. B. JEFFERY, B.S.A., M.Sc., P.Ag., Livestock Supervisor (A.I.)
J. L. KERNS, B.Sc., P.Ag., Livestock Supervisor (Cattle)
V. M. GLEDDIE, B.Sc., M.Sc., P.Ag., Livestock Supervisor (Sheep)
P. J. MARTIN, B.S.A., M.Sc., Animal Nutritionist (Feed Testing)
I. A. COLES, B.S.A., Supervisor of Feeder Associations
H. M. LINK, Supervisor of Brand Inspection and Pounds
L. BRINKHURST, Brand Recorder
J. BELZER, Livestock Investigator
H. G. PALLISTER, Brand Inspection Fieldman (Southern Area)
R. W. BOGGS, Brand Inspection Fieldman (Northern Area)
J. DROZDIK, Chief Clerk and Licensing

POULTRY BRANCH

R. H. McMILLAN, B.S.A., Poultry Commissioner
G. R. MILNE, B.S.A., Poultry Supervisor

REGIONAL POULTRY SPECIALISTS

Edmonton
Edmonton
Fairview
Red Deer
Camrose
Calgary
Lethbridge

K. H. Rowe, B.S.A., P.Ag.
K. Darlington
G. E. Patsula, B.Sc.
J. L. Plumley, B.Sc., P.Ag.
G. O. Johnson, B.Sc.
W. Hutchison
R. A. Stafford, B.S.A., P.Ag.

The Animal Industry Division of the Department was created by incorporation of the existing Dairy Branch, Livestock Branch and Poultry Branch into one Division. This became effective on April 1st and was part of a general reorganization of administrative structure in the Department. Immediate staff changes were the appointments of W. H. T. Mead, previously Livestock Commissioner, to the position of Director; and of W. C. Gordon to that of Livestock Commissioner. Under this arrangement the Director retained approximately one half of the administrative responsibility previously held by him as Livestock Commissioner. The portion retained included the basic regulatory aspects of the Branch, while those under direction of the Livestock Commissioner remain basically the technical, promotional and extension aspects of Branch activities.

While the actual move was not made, arrangements were made for the Division components, with the exception of the Dairy Laboratory, to move from the Legislative Building and the 107th Street Building to the fourth floor of the 100th Avenue Building.

Following is the Division report by Branches and Sections.

DAIRY BRANCH

Milk production during 1966 totalled 1,612,070,000 pounds; a decrease of 29.2 million pounds or 1.8% as compared to 1965. This decrease was due primarily to fewer cows being milked. The June 1st census figure reported 245,000 cows in milk; a drop of 17,000 cows from 1965. Cool weather and poor moisture conditions in June and July reduced pasture yields and the first cutting of hay. Warmer weather produced a good second cut of hay and pastures continued greener with grazing through October. Winter feed supplies were generally good to excellent.

The average milk production per cow showed an increase of 316 pounds over 1965 and represents an all time high at 6,580 pounds. The average of the 18,116 cows being tested under the Provincial Cow Testing Service was 10,547 pounds.

The estimated farm value of milk production totalled \$55,333,000 which represents an all time high and an increase of \$4,163,000 over 1965. This value includes the federal government subsidy payments. From January 1 to March 31, 1966, the subsidy payment was 10.9 cents per pound butterfat for churning cream. On April 1, 1966, the Agricultural Stabilization Board was authorized to make direct payments to producers of 75 cents per hundredweight on milk or cream used for manufacturing purposes. In addition, producers supplying milk to the fluid market were eligible for 75 cents per hundredweight on deliveries in excess of 120% of fluid sales. To the churning cream producer, this policy meant an increase of 21.43 cents per pound butterfat over and above the approximately 60 cents per pound butterfat initial payment paid by the processor based on 59 cents a pound butter guaranteed by the Agricultural Stabilization Board. It should be noted that the above estimate of farm

value includes subsidy payments to producers reported by the Data Processing Centre in Ottawa.

The estimated plant value of manufactured or processed products amounted to \$61,675,000. This represents a new high value and an increase of \$3,453,000 over 1965.

While the 1966 creamery butter production of 34,543,000 pounds was down 5.5% (2,019,000 pounds) the higher price per pound increased the value to \$20,660,000 approximately \$1,000,000 more than in 1965.

There were increases in production and values for fluid milk sales, cheddar cheese, and ice cream. Fluid milk sales were up approximately 2,000,000 pounds over 1965 and with a higher price, showed an increased value of over \$1,000,000. Cheddar cheese production was up approximately 114,000 pounds over 1965 and resulted in an increased value of over \$152,000. Ice cream production was up approximately 188,000 gallons over 1965 with an increased value of approximately \$237,000. There were increases in the percentage of the total milk utilized for fluid sales, ice cream, cheesemaking and concentrating, and fed to farm animals; whereas lower percentages were utilized in the manufacture of creamery butter and farm-home consumed. Almost exactly half of Alberta's milk production (50.1%) was utilized for the manufacture of creamery butter.

The quality of Alberta creamery butter showed a slight improvement during 1966 with over 97% being classified as "Canada First Grade" for the first time.

On July 11, 1966, a Bill to establish a Canadian Dairy Commission was passed by the Government of Canada and on December 2, 1966, a three-man commission was named as follows: S. C. Barry, Chairman; Jules Thibaudeau, Member, dairy farmer, Quebec; L. A. Atkinson, Member, General Manager, Fraser Valley Milk Producers' Association. A nine-member consultive committee was also named.

Miss Gaylene Miller of Dalemead, who reigned as Alberta's Dairy Princess during the year, successfully competed in the national finals at the C.N.E. in Toronto and was named Canadian Dairy Princess on September 1, 1966.

On September 3, 1966, the "Acme" holstein herd of Pickard and Clark at Carstairs was dispersed by public auction. An average of \$1,435.00 was realized on the 57 head sold; with the top cow selling for \$9,200.00.

ESTIMATED FARM VALUE OF ALBERTA MILK PRODUCTION 1966

The quantity, price, value and utilization of milk production during 1966 is reported in the following table. To indicate changes from the previous year, the 1965 figures have been included.

	Year	Pounds	Milk Equivalent Pounds	Per Cent Total Milk	Price	Value \$
Butterfat for Creamery Butter	1966	27,980,000	808,306,000	50.1	.771 per lb.	21,576,000.00**
	1965	29,615,000	855,551,000	52.1	.666 per lb.	19,732,000.00**
Farm Dairy Butter	1966	1,067,000	24,968,000	1.5	.57 per lb.	608,000.00
	1965	1,139,000	26,653,000	1.6	.56 per lb.	638,000.00
Milk and Butterfat for Ice Cream (milk basis)*	1966		44,997,000	2.8	2.74 per 100 lbs.	1,233,000.00***
	1965		31,789,000	2.0	2.87 per 100 lbs.	913,000.00
Milk for Cheese-making and Concentrating	1966		145,087,000	9.0	3.01 per 100 lbs.	4,363,000.00***
	1965		128,581,000	7.8	2.82 per 100 lbs.	3,627,000.00
Fluid Milk Sales	1966		292,585,000	18.2	5.12 per 100 lbs.	14,988,000.00
	1965		290,879,000	17.7	4.82 per 100 lbs.	14,028,000.00
Cream Fluid Sales (milk basis)	1966		66,737,000	4.1	2.72 per 100 lbs.	1,817,000.00
	1965		70,498,000	4.3	2.85 per 100 lbs.	2,012,000.00
Milk Farm Home Consumed	1966		134,850,000	8.4	2.64 per 100 lbs.	3,560,000.00
	1965		142,900,000	8.7	2.76 per 100 lbs.	3,944,000.00
Fed Farm Animals ..	1966		94,540,000	5.9	2.64 per 100 lbs.	2,496,000.00
	1965		94,370,000	5.8	2.76 per 100 lbs.	2,605,000.00
Kept on Farms, Skim-milk from Creamery Butter and Skim-milk and Buttermilk from Dairy Butter	1966	722,346,000			.49 per 100 lbs.	3,539,000.00
	1965	764,783,000			.48 per 100 lbs.	3,671,000.00
Federal Govt. Subsidy Entitlement Exclusive of Butterfat for Creamery Butter ..	1966					1,153,000.00
	1965					55,333,000.00
Total	1966		1,612,070,000			51,170,000.00
	1965		1,641,221,000			

* Does not include butterfat from creamery butter used in the manufacture of ice cream.

** Includes Federal Government Subsidy Entitlement.

*** Does not include Federal Government Subsidy.

ESTIMATED PRODUCTION AND VALUE OF FACTORY DAIRY PRODUCTS

The following table shows the quantity, price and value of dairy products manufactured or processed in Alberta dairy manufacturing plants during 1966 with corresponding figures for 1965 added for the sake of comparison.

	Year	Quantity	Price	Value \$
Creamery Butter, lbs.	1966	34,543,000	.5981 per lb.	20,660,000.00
	1965	36,562,000	.5372 per lb.	19,641,000.00
Cheddar Cheese, lbs.	1966	2,302,000	.4491 per lb.	1,034,000.00
	1965	2,188,000	.4031 per lb.	882,000.00
Ice Cream, gals.*	1966	5,430,000	1.26 per gal.	6,842,000.00
	1965	5,242,000	1.26 per gal.	6,605,000.00
Fluid Milk Sales lbs. (including processing charges)	1966	292,585,000	6.80 per 100 lbs.	19,896,000.00
	1965	290,879,000	6.48 per 100 lbs.	18,849,000.00
Cream as Milk, lbs. (including processing charges)	1966	66,737,000	4.40 per 100 lbs.	2,936,000.00
	1965	70,498,000	4.51 per 100 lbs.	3,179,000.00
Skim milk and Buttermilk Sales for Human Consumption (including processing charges)	1966	22,740,000	3.89 per 100 lbs.	885,000.00
	1965	23,890,000	3.83 per 100 lbs.	915,000.00
Skim milk, Buttermilk, lbs.	1966	37,643,000	.49 per 100 lbs.	184,000.00
	1965	44,240,000	.48 per 100 lbs.	212,000.00
Whey, lbs.	1966	19,746,000	.25 per 100 lbs.	49,000.00
	1965	18,581,000	.24 per 100 lbs.	45,000.00
Miscellaneous Manufactured Products**	1966			9,189,000.00
	1965			7,894,000.00
Total	1966			61,675,000.00
	1965			58,222,000.00

* Includes hard and soft ice cream.

** Includes concentrated milk products, cottage cheese, whey butter, cheese other than cheddar and yoghurt.

BRANCH EXTENSION ACTIVITIES

Members of the Dairy Branch staff attended and addressed meetings on dairy production, feeding and management, processing and manufacturing of dairy products, and the processing and storage of frozen foods. Branch personnel also attended numerous committee and board meetings concerned with the dairy and frozen food industries. Assistance was given to 4-H dairy club activities, achievement days, exhibitions and special promotional activities such as the Dairy Princess Competition held in conjunction with the Edmonton and Calgary Exhibitions.

The Dairy Branch continued to distribute monthly newsletters, circulars and bulletins. In 1966, the publication entitled, "Milk and Cream, Taints and Defects, Causes and Remedies" was compiled for distribution through the Agricultural Extension Service. Branch personnel prepared material for the press, radio and T.V. media, in addition to making personal appearances.

In co-operation with the Department of Dairy and Food Science, University of Alberta, and the Alberta Vocational Training, a four-week short course was conducted for dairy plant men during November. The first two weeks of the course covered such subjects as dairy chemistry, dairy bacteriology, dairy herd improvement and the grading and testing of dairy products. The last two weeks were spent on processing butter and cheese (cheddar and cottage). Fifteen students attended the course which included field trips to the cheese factory at Thorsby and the milk processing plants at Wetaskiwin and Camrose. The successful students received diplomas recognizing their achievement. An active up-grading program must be maintained to provide the industry with skilled, efficient plant personnel and short courses are a means of achieving this.

Examinations were conducted throughout the year to qualify candidates as licensed graders and testers of dairy products. Similar examinations were held for bulk milk collectors under the direction of Dairy Branch staff.

Official weight certificates covering a total of 6,426 boxes and representing 3,142,864 pounds of creamery butter were issued to Alberta manufacturers availing themselves of the Agricultural Stabilization Board policy.

DAIRY PLANT INSPECTION AND INSTRUCTION

Dairy Plant Changes

A total of 110 licensed dairy manufacturing plants operated during the year. The majority of the plants operated as butter processing plants or as combined butter and fluid milk processing operations. Numerous changes occurred within the industry during the past year and are recorded as follows:

On January 5, 1966, it was formally announced that Silverwood Dairies Limited, London, Ontario, had purchased the controlling interest of United Dairies Limited of Calgary.

On February 1, 1966, Dutch Dairy Farms Limited of Armstrong, British Columbia, took over the operations of the Bashaw Creamery Company Limited. On March 31st, the local processing and delivery of fluid milk was discontinued in Bashaw. An extensive addition was made to the plant to house a cheddar cheese operation which was started July 19, 1966.

On May 1, 1966, the new cheese plant of the Northern Alberta Dairy Pool Limited, Thorsby, was put into operation. The Central Alberta Dairy Pool creamery at Bluffton was closed on the same date.

As of June 30, 1966, Palm Dairies Limited ceased to manufacture pasteurized cheddar cheese at Warburg. Manufacturing milk was received at the plant and transferred via bulk tank truck to Edmonton.

On September 12, 1966, it was announced that Edmonton's oldest dairy, The Jasper Dairy Company Limited, had been purchased by Canada Safeway Limited. On November 1st, the plant discontinued receiving churning cream and renovations were started to convert to plastic carton operation for fluid milk. On December 1st, household milk delivery by Jasper Dairy was discontinued.

On September 30, 1966, the Linden Dairy ceased operations as a cheddar cheese factory and equipment was sold to Neapolis Dairy.

On October 16, 1966, Model Dairies Limited, Calgary, operated by Palm Dairies Limited, discontinued receiving churning cream but maintained the fluid milk processing operation.

Early in November, the Northern Alberta Dairy Pool Limited, Camrose, put into operation a continuous buttermaking machine designed and adapted by Simon Freres of Cherbourg, France. It was the first Alberta installation of the automated machine designated as "Contimab".

The Central Alberta Dairy Pool at Red Deer commenced construction in September of a milk powder plant which should be in operation early in 1967.

Inspection and Instruction

In February 1966, Earl W. McLeod resigned from the Dairy Branch to accept a position in Ontario. Kenneth J. Spiller joined the Dairy Branch staff on July 11, 1966, being assigned duties in the Edmonton North-West District.

Plant inspections totalling 1,276 were carried out by the field staff. Official check tests were made on 24,101 shipments of milk and cream for butterfat, while 69,996 lots of churning cream were checked for grade. Of the samples which were officially graded and tested by Dairy Branch personnel, 1.67% required adjustments. Check testing for moisture content of butter at plants was completed on 126 samples.

During the past year, extensive investigations were made by branch personnel to examine the methods of bulk sampling at dairy farms and sampling and testing procedures at plants.

Bulk Milk Handling

The trend to the bulk method of handling both fluid and manufacturing milk from farms to processing plants continued during 1966.

The following table shows the number of farm bulk tanks installed in Alberta.

Edmonton Fluid Milk	456
Calgary Fluid Milk	281
Lethbridge Fluid Milk	50
Medicine Hat Fluid Milk	21
Ponoka Fluid Milk	4
Stettler Fluid Milk	9
Brooks Fluid Milk	3
Evansburg Fluid Milk	14
Wetaskiwin Fluid Milk	4
Red Deer Fluid Milk	18
Fluid Markets (canned-off)	27
Camrose Manufacturing Milk	52
Red Deer Manufacturing Milk	22
Wetaskiwin Manufacturing Milk	19
Manufacturing Milk (canned-off)	17
Total	997

A total of 51 bulk transport trucks operated in the province. Check weighing of 50 loads of milk by Dairy Branch personnel provided a crosscheck on the weights reported at the time the milk was picked up at the dairy farms by the bulk tank graders.

Quality Control Competitions

A flourishing Dairy Industry demands every effort to provide a continuous supply of high quality products. The Quality Control Advisory Committee of the Alberta Dairy Farmers' Association reviewed several specific aspects concerning the production and processing of quality milk and related dairy products. During the year, regulations under The Dairy Farmers' Act were amended to facilitate more effective suspension and re-instatement of manufacturing milk producers found not to be in compliance with the quality standards as set forth in the Alberta Milk Grade Standards. The Food and Drug Directorate continued to make spot checks on the bacteriological quality and sediments of milk received at cheese factories, condenseries and powder plants. Personnel of the Dairy Branch made farm visits to milk producers, who were found not to be in compliance with existing manufacturing milk standards, and attended producer meetings in a concerted effort to improve milk quality at the farm level.

During 1966, Alberta creameries participated in butter classes at the Brandon, Canadian National and Royal Winter fairs. Of a total of 128 entries sent to the three exhibitions, Alberta exhibits won 13 first, 78 second and 32 third place awards. At the Toronto Royal, the Central Dairy Pool, Hanna, won the Championship Aggregate award for the two commercial butter classes, while Union Milk Company, Medicine Hat, won the Reserve Championship award. Central Alberta Dairy Pool, Ponoka, won an award for the best finished exhibit at the Toronto Royal.

The annual competitions based on the commercial grading of butter and cheese throughout the year were conducted by the branch. Ice cream and cottage cheese samples were scored four times during the year at Edmonton and Calgary by panelists under the supervision of dairy specialists. To encourage good housekeeping and dairy plant improvement, all operating plants in the province were scored by district dairy specialists. The top plants were re-scored by headquarters personnel and the winners of the three divisions determined. A total of 50 plants scored 80% or more and qualified for a merit certificate.

Licenses for 1966, with corresponding figures for 1965 are listed below:

License

	1965	1966
Milk and Cream Testers Form "A"	274	255
Cream Graders Form "B(C)"	210	202
Plant Milk Graders Form "B(M)"	153	133
Tank Milk Graders Form "B(M)"	123	127
Dairy Manufacturing Plant Form "C"	115	110*

*Due to change in ownership, one duplicate license was issued during 1966.

Margarine and Imitation Dairy Products

The program of margarine sampling and analyses was continued. In addition, new cartons were submitted for Ministerial approval. During the year, approval for use of the "Elgin" print was granted. Preliminary investigations were conducted with respect to obtaining equipment that might be more suitable for color determinations than the Lovibond Tintometer presently in use. Co-operation from margarine manufacturers has been most satisfactory.

The following table indicates the extent of checking conducted during the year and new cartons granted Ministerial approval.

	Color Determinations	Packaging	Composition	Cartons for Approval
Compliance	31	34	13	13
Non-Compliance	1	10	—	1
Total	32	44	13	14

Branch officials periodically checked retail outlets to ascertain if products which might replace dairy products were being offered for sale in contravention of The Dairymen's Act.

DAIRY CATTLE IMPROVEMENT SERVICE

Section Activities

1. The principal activity of this section during 1966 was the Cow Testing Service. Visits to testing centres, correspondence and record analysis studies were carried out by the supervisor and dairy production specialists throughout the year.

2. On June 1, 1966, Arnold A. Hughes was appointed Supervisor of Dairy Cattle Improvement, filling the vacancy created by the prior appointment of R. P. Dixon to Assistant Dairy Commissioner. The appointment of E. S. Bristow, succeeding Arnold A. Hughes as Dairy Production Specialist, was made on August 1, 1966.

3. Extension activities included dairy field days, judging of dairy cattle at exhibitions, 4-H achievement days, 4-H Provincial Eliminations, the Dairy Princess Competition, the Edmonton Grassland Improvement Program, and dairy production short courses.

4. Cow testing workshops were held during the winter months at Calgary, Rocky Mountain House, Leduc, Lacombe, and Camrose, where herd owners were assisted in analyzing their cow testing records. This section continued to co-operate with other branches in conducting short courses throughout the province.

Cow Testing

A total of 18,166 cows were tested by the Cow Testing Service in 1966, with an average production of 10,547 pounds of milk and 366.8 pounds of butterfat.

The 502 herds under test in 1966 represented a decrease of 1,392 cows and 37 herds compared to the previous year.

During 1966, 49 new herds and 1,204 cows were placed under test, while 2,596 cows in 86 herds discontinued the service.

(a) Mail Order

This was the basic program offered to 313 herd owners throughout the province. Monthly milk samples were lifted by the herd owners from individual cows and forwarded to one of the testing centres for testing by Dairy Branch personnel. Two plans of cow testing were offered to herd owners. Milk from each cow was either weighed daily (Plan I) or weighed on one day a month (Plan II) by the herd owners.

The following table shows the number of herds and cows tested under the mail order system during the past three years.

	1964	1965	1966
Number of Herds	395	363	313
Number of Cows	11,191	10,203	9,155

From the table it can be seen that there was a further decline in both the number of herds and the number of cows tested under this program in 1966.

A study of the discontinued herds for the period 1964 to 1966 inclusive, showed that 50% of these herds had used the service for five years or more, while two-thirds of them were herds of 30 cows or less.

Specific reasons for discontinuing the program were reported by 75 of the herd owners. Almost one-third of them reported that their herds had been sold. The next most com-

mon reasons given were increase in fees, installation of new pipelines, herds transferred to R.O.P., labor problems, and other miscellaneous reasons.

(b) Owner-Sampler Route Plan

This program operated in the Edmonton and Calgary areas. Under this program, a full-time fieldman visited each farm monthly and collected the milk samples lifted by the herd owners. Heifer calf identification and ear-tagging was carried out at the time of the monthly visits by the fieldman.

The following table shows the number of herds and cows tested under the Owner-Sampler Route Plan Program by centres during the past three years.

	1964	1965	1966	1965*	1966
		Edmonton		Calgary	
Number of Herds	129	134	136	42	53
Number of Cows	5,813	6,441	6,356	2,194	2,655

*Calgary Route Plan Program inaugurated June 1, 1965.

In the Edmonton area, there were a total of 2 more herds, but 85 less cows tested under the Owner-Sampler Route Plan during 1966 than in 1965. The fieldman made 1,585 farm visits, ear-tagged 1,560 heifer calves and maintained calf record books for 122 herd owners during 1966.

A total of 15 new herds and 452 cows enrolled in the Edmonton Route Plan in 1966, while 13 herds with 704 cows discontinued the program.

The Calgary Route Plan Program enrolled 13 new herds and 391 cows, while 2 herds with 302 cows discontinued the program. The fieldman made 861 farm visits, ear-tagged 286 heifer calves and maintained calf record books for 23 herd owners.

The total number of herds and cows tested under the Route Plan Program has increased every year since this program was introduced in 1954.

Testing Centres

Testing centres were in operation at the locations shown in the table below. Two full-time laboratory assistants did the testing at the Edmonton centre assisted by the fieldman. The samples at the Calgary centre were tested by the fieldman with assistance from the part-time clerical help. At the other centres, the resident dairy specialist tested or supervised the testing of the samples.

The following table shows the number of tests conducted at each centre during the past three years.

Testing Centres	1964	1965	1966
Calgary	11,782	17,726	23,811
Camrose	9,445	11,254	10,860
Edmonton	63,174	64,619	64,188
Fairview	2,743	2,724	2,094
Lethbridge	9,196	8,673	8,381
Ponoka	2,436*	—	—
Red Deer	18,751	18,413	16,020
Vermilion	3,527*	3,631	3,101
	121,054	127,040	128,455

*Centre was not in operation for the entire year.

A total of 1,415 more tests were conducted in 1966 than in 1965.

The following table summarizes the Cow Testing Service for 1966. Comparable figures for 1964 and 1965 are included.

SUMMARY

	1964	1965	1966
Number of herds under test	524	539	502
Number of cows under test	17,004	18,838	18,166
Average number of cows per herd	32.5	34.9	36.2
*Number of Cow Years	12,206	12,926	13,298
Average number of Cow Years per herd	23.3	24.0	26.5
Average production of milk (lbs)	11,008	10,665	10,547
Average production of butterfat (lbs.)	381.8	376.0	366.8
Average Test (%)	3.47	3.52	3.48

*Herd averages on the basis of cow years. The total number of cows on test during the year was used in determining the herd average, except where new cows were placed on test, or a cow was sold or died; in these cases, only that part of the year in which she produced was used.

The average production of all cows on test showed a decrease of 118 pounds of milk and a decrease of 9.2 pounds of butterfat during the year 1966 compared to 1965.

The 9,155 cows in the 313 herds on the Mail Order Program in 1966 showed an average increase in production per cow year of 163 pounds of milk and 3.21 pounds of butterfat. Almost an equal number of cows, 9,011 in 189 herds on the Route Plan Program, declined in production by 432 pounds of milk and 16.98 pounds of butterfat per cow year. The drop in production on the Edmonton Route Plan Program during 1966 brings the decrease for the last two years to 911 pounds of milk per cow year. There are several factors which can account for this considerable decrease in production, and while no definite explanation can be offered at this time, every possibility is being thoroughly investigated. Changes in management practices are the most probable cause of this recent decline in production in contrast to severe climatic and poor feed conditions in 1965. Breeding efficiency, feeding, selection of sires and culling practices, as well as the general interest and attitude of dairymen in the fluid milk sheds, are factors being investigated.

Reports and Competitions

1. Annual reports, showing both total and average milk and butterfat production, were sent to all herd owners as well as to district agriculturists' offices.

2. An Honor Roll, listing all herds of 5 cow years or more, and producing an average of over 400 pounds of butterfat, was compiled; herds were required to be under test for the entire cow testing year. A total of 110 herds qualified in 1966 as compared to 131 in 1965.

3. During 1966, graded certificates of production were issued for all cows completing the necessary production and recording

requirements. Each herd owner was provided with a certified record book and these were recalled as necessary to allow the latest available production records to be added.

4. Production records were compiled on 454 first lactation daughters of A.I. sires in herds enrolled in the Edmonton and Calgary Route Plan Program of cow testing. This information was submitted to the Canada Department of Agriculture for use in their Sire Appraisal Studies. It was also used in the preliminary evaluation of young sires.

5. Higher production and herd improvement was encouraged through competitions sponsored by the Alberta Dairymen's Association. An Aggregate Herd Improvement Competition was introduced in 1966 with awards being made to the herds showing the most improvement during the last five years. Financial assistance for prizes was received from dairy supply firms and all winners were determined by the Dairy Branch from cow testing records.

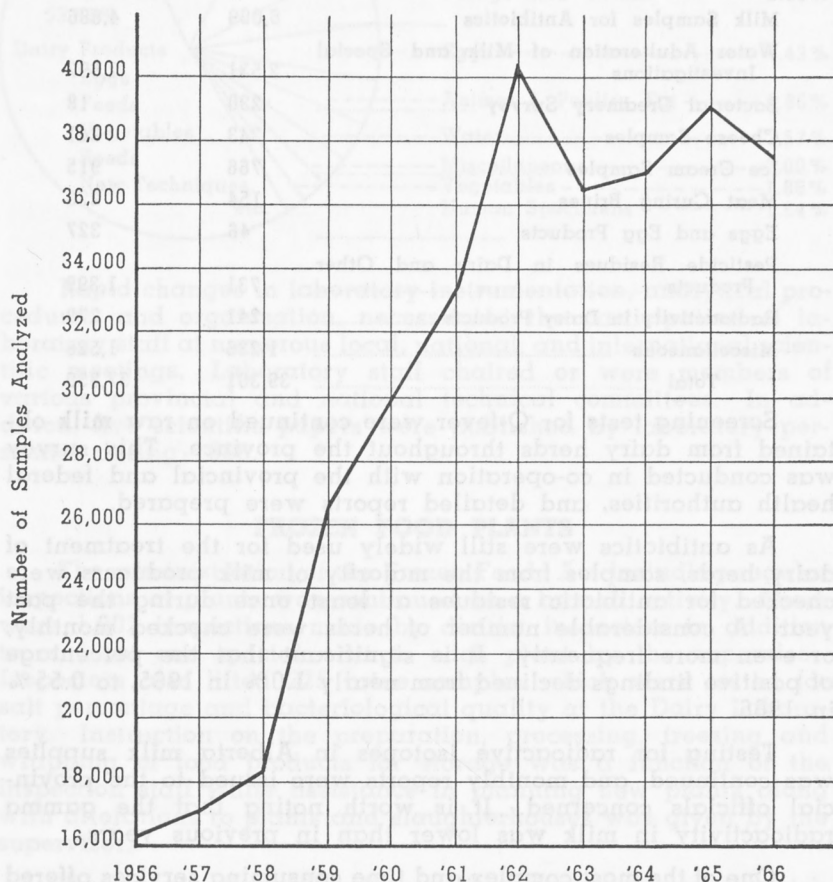
6. The grade Holstein herd of Mr. William Christie of South Edmonton was dispersed on November 16, 1966. During the 12 years that this herd was on the Provincial Cow Testing Program, it won the Greater Average Butterfat Competition 10 times, including 1966. This herd never placed lower than second.

LABORATORY SERVICE

The laboratory continued to play an important role in the quality control of food products. In order to fulfill this role, the laboratory analyzed a variety of products from producers, processing plants, retail outlets, consumers, etc. The samples were received from all parts of Alberta and were submitted by Provincial Health Units, Dairy Specialists, Public Utilities Board personnel, and other parties concerned. Primarily, the samples were investigated for bacterial quality and chemical composition. In addition, attention was given to a great number of special analyses and studies, and to problems related to production, processing and distribution of dairy products and other foods.

Once again the laboratory devoted a considerable portion of its activities to the analyses of foods for toxic compounds such as insecticides, antibiotics, preservatives, etc.

During the past year, there was an increase in requests from the consuming public, food industry, restaurants, health units, and private individuals for additional analytical services and consultations. Consequently, a larger number of foods and raw ingredients, other than dairy products, were received for analysis. A total number of 37,330 samples of food products and other agricultural commodities were analyzed in 1966. The following graph illustrates the number of samples submitted to the Dairy Branch Laboratory from 1956 to 1966.



While the number of samples analyzed in 1966 did not change significantly from the numbers of the past few years, the variety of tests, and the time spent per sample increased appreciably. The introduction of highly specialized equipment, for example, Infrared and Atomic Absorption Spectrophotometers, Gas Liquid Chromatograph, and the adoption of new, more accurate tests and procedures, required better trained personnel and more man hours per sample.

The following table indicates the classification and number of samples analyzed during 1966 with the corresponding figures for the previous year.

	1965	1966
Milk Control Service	15,703	14,793
Butter Samples for Moulds and Yeasts	3,674	3,453
Butter Samples for pH Values	1,835	1,706
Milk Samples for Q-fever	5,902	4,868
Milk Samples for Antibiotics	6,009	4,886
Water Adulteration of Milk and Special Investigations	2,531	2,697
Bacterial Creamery Survey	230	18
Cheese Samples	243	241
Ice Cream Samples	766	915
Meat Curing Brines	154	223
Eggs and Egg Products	46	327
Pesticide Residues in Dairy and Other Products	731	1,399
Radioactivity in Dairy Products	241	278
Miscellaneous	1,236	1,526
Total	39,301	37,330

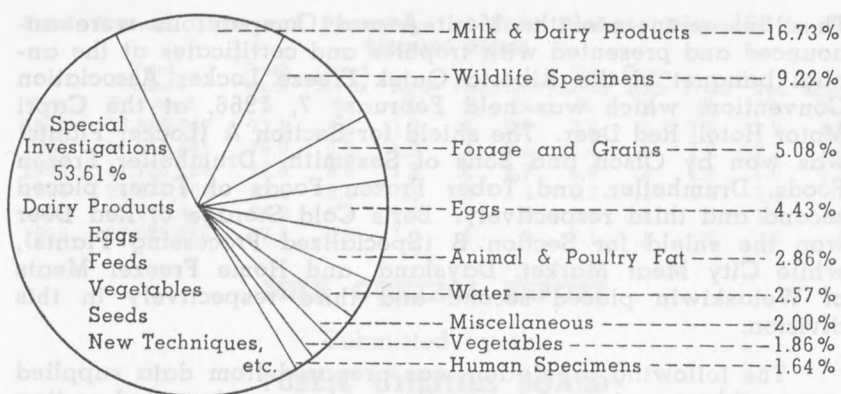
Screening tests for Q-fever were continued on raw milk obtained from dairy herds throughout the province. This survey was conducted in co-operation with the provincial and federal health authorities, and detailed reports were prepared.

As antibiotics were still widely used for the treatment of dairy herds, samples from the majority of milk producers were checked for antibiotic residues at least once during the past year. A considerable number of herds were checked monthly, or even more frequently. It is significant that the percentage of positive findings declined from nearly 1.0% in 1965, to 0.55% in 1966.

Testing for radioactive isotopes in Alberta milk supplies was continued, and monthly reports were issued to the provincial officials concerned. It is worth noting that the gamma radioactivity in milk was lower than in previous years.

One of the most complex and time consuming services offered at this laboratory was the analyses of foods and other commodities for pesticide residues. This laboratory was the only one in Alberta offering such a service. The entire pesticide residue testing program was carried out under the guidance and co-ordination of the Alberta Interdepartmental Committee on Pesticides. Therefore, this service was provided for various branches of the Departments of Agriculture, Public Health, Lands and Forests, as well as the University of Alberta and other provincial agencies. As the residue testing service was expanded during 1966, the number of specimens almost doubled. Routine analyses and special studies were carried out on dairy products, eggs, wildlife, vegetables, animals, animal and poultry tissues, forage, feeds, cereals, water, soil, human specimens, etc.

The circle graph illustrates the type and percentage of specimens analyzed for pesticide residues during 1966. Approximately 50% of submissions were random samples, and the remainder originated through various special programs or research projects.



Rapid changes in laboratory instrumentation, analytical procedures, and organization, necessitated the participation of laboratory staff at numerous local, national, and international scientific meetings. Laboratory staff chaired or were members of various provincial and national technical committees. In addition, five scientific papers were published by laboratory personnel during 1966.

FROZEN FOOD PLANTS

The administration of the Frozen Foods Act including regular inspections of plants was continued as a branch activity. There were 1,002 inspections made by district inspectors in addition to at least one special visit to each plant by the supervisor. Inspectors also lifted 225 brine samples which were tested for salt percentage and bacteriological quality at the Dairy Laboratory. Instruction on the preparation, processing, freezing and wrapping of food products for storage was a function of the inspection staff while assistance in planning new plants along with alterations to plants and slaughterhouses was given by the supervisor.

Five plants discontinued operations during the year which were located at the following points: Gleichen, Neapolis, Olds, Red Deer and Medicine Hat. The Red Deer and Medicine Hat plants were non-service locker plants operated in conjunction with the Union Milk Company of Calgary. Three processing plants were constructed and put into operation at Calmar, Devon, and Fort Macleod while two processing plants at Drayton Valley and Lethbridge were licensed under the Frozen Foods Act. At the end of the year, there were 95 locker plants, 49 specialized processing plants and 3 animal food storage plants licensed under the Frozen Food Act.

The scoring of all plants for the Merit Award Competition and for Proficiency Certificates was again carried out by branch inspectors, while the top plants in each inspector's district were given a final score by supervisors from the branch. Proficiency Certificates prepared by the Dairy Branch were presented to thirty-four operators for plants that offered a high standard of service and maintained sanitary facilities and efficient operations.

The 1965 winners of the Merit Award Competitions were announced and presented with trophies and certificates at the annual banquet of the Alberta Quick Freeze Locker Association Convention, which was held February 7, 1966, at the Capri Motor Hotel, Red Deer. The shield for Section A (Locker Plants) was won by Olson and Sons of Sexsmith. Drumheller Frozen Foods, Drumheller, and Taber Frozen Foods of Taber placed second and third respectively. Berts Cold Storage of Red Deer won the shield for Section B (Specialized Processing Plants), while City Meat Market, Daysland, and Home Freezer Meats of Wetaskiwin placed second and third respectively in this division.

The following tabulation was prepared from data supplied on monthly reports and covers the twelve month period ending November 30, 1966. For comparison, data for the previous year is included.

	1965	1966
Number of Specialized Processing Plants	44	49
Number of Frozen Food Locker Plants	102	95
Number of Animal Food Storage Plants	3	3
Number of Lockers Installed	19,537	16,969
Number of Lockers Rented	12,901	11,761
Percentage of Lockers Rented	66.0	69.3

The locker rentals continued to decline as in the past few years. Several plants discontinued renting lockers, but continued to operate as specialized processing plants. The volume of processing for lockers also fell below the previous year and the volume of processing for home freezers again increased considerably. The overall volume of processing once again exceeded all previous years.

The following table shows the average poundage processed per plant during the designated years.

Year	Pounds Per Plant
1955	89,935
1960	136,097
1964	163,186
1965	173,262
1966	188,092

The above data indicates the greater use by patrons of the processing services offered by the industry.

The following tables indicate the trend in the locker industry over a period of years.

Locker Plant Operations

Year	No. of Plants Operating	No. of Lockers Installed	No. of Lockers Rented	Per Cent of Lockers Rented	Average Lbs. Per Rented Locker
1945	61	16,770	13,572	80.9	326.0
1950	141	48,647	43,802	90.0	305.2
1955	153	51,488	43,608	84.7	307.9
1960	136	37,646	26,316	69.9	329.6
1961	131	34,125	23,881	69.9	292.9
1962	121	29,770	20,305	68.5	289.5
1963	114	26,695	17,962	67.3	286.3
1964	107	23,171	14,875	64.2	242.8
1965	102	19,537	12,901	66.0	256.2
1966	95	16,969	11,761	69.3	230.3

Total Amount, Type and Percentage of Food Products Processed in All Licensed Plants

Year	Total Pounds Processed	Fresh Meat %	Cured Meats %	Lard %	Fish %	Poultry %	Big Game %	Game Birds %	Fruits %	Veg. %	Misc. %
1960	18,509,247	77.8	9.6	1.2	.4	2.9	3.4	.1	1.5	1.9	1.2
1962	16,010,445	76.9	9.3	1.2	.4	3.4	4.4	.1	1.2	2.1	1.0
1963	17,126,204	77.8	8.6	1.3	.4	2.7	4.6	.2	1.3	2.0	1.1
1964	24,477,903	82.2	8.4	1.3	.3	1.4	2.2	.1	1.3	2.1	.7
1965	25,298,363	84.3	8.4	1.2	.3	.8	2.6	.1	.8	1.1	.4
1966	27,085,266	87.0	6.6	1.0	.1	.5	3.1	.1	.4	.8	.4

MILK CONTROL REPORT

Submitted by the

PUBLIC UTILITIES BOARD

J. B. MOORE, Administrator of Milk Control

Increases or decreases in the consumption of fluid milk products in the various controlled areas for the calendar year 1966 were as follows:

Calgary	+2.8%	Camrose	-3.7%
Crowsnest Pas	-4.2%	Edmonton	+2.5%
Lethbridge	+1.9%	Medicine Hat	-1.3%
Ponoka	-3.6%	Red Deer	+5.8%

2% Partly Skimmed milk continued to show increases in all areas where it is marketed. Skim milk consumption decreased in the three larger markets of Calgary, Edmonton and Lethbridge. Total sales, after the price increase in June, showed a decrease for June, July and August. At the end of this period, sales showed some attempt at recovery.

Production showed increases in the Calgary, Crowsnest, Edmonton, Medicine Hat and Red Deer areas of 5.1%, 5.6%, 3.7%, 3.8% and .5% respectively. Camrose, Lethbridge and Ponoka registered decreases of 2.9%, 3.1% and 6.3% respectively.

While licensed distributors remained constant at 24, the ownership changed in two instances, Silverwood's Dairies Limited acquired United Dairies Limited and Canadian Safeway acquired Jasper Dairy Company Limited, Edmonton.

Licensed milk producers number 791, a decrease of 25, cream producers number 29, a decrease of 25.

Six Orders, numbered as follows: Order Nos. 27409, 27446, 27517, 27536, 27702 and 28003 were issued. Order No. 27536 set forth prices in the various controlled areas.

Hearings were held in Calgary, Crowsnest Pass, Edmonton, Lethbridge, Medicine Hat and Ponoka.

Division 5, Sections 103 to 114 of "The Public Utilities Board Act" was repealed, being replaced by "The Milk Control Act", the Public Utilities Board retaining jurisdiction under the new Act.

The Board continued its active and financial support of the Dairy Cost Survey and the several Milk Foundations.

Membership was maintained in the International Milk Control Agencies Association.

STATISTICAL DATA RELATING TO MILK CONTROL

The Tables which follow relate to milk and cream supplied and sold for fluid consumption in the areas of the Province controlled by the Public Utilities Board during the year 1966.

TABLE I
Consumption of Fluid Milk Monthly, 1966 — In Quarts

Area	Standard, Homo, 2%, Special, Skim'											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	2,632,329	2,586,205	2,987,053	2,702,049	2,672,750	2,718,736	2,332,619	2,299,073	2,767,898	2,805,116	2,652,510	2,761,043
Camrose	72,258	67,712	75,261	71,751	69,583	66,760	57,988	60,934	65,695	69,170	68,120	70,885
Crownsnest Pass ..	39,132	38,116	41,895	39,193	38,932	35,503	34,182	36,594	37,077	37,488	36,700	41,700
Edmonton	3,412,395	3,385,844	3,860,332	3,399,032	3,324,932	3,319,946	2,897,594	2,870,787	3,568,136	3,523,347	3,330,807	3,654,533
Lethbridge	290,587	276,167	291,724	288,111	289,779	270,121	261,418	264,333	280,829	288,647	280,278	292,225
Medicine Hat	176,367	167,896	184,071	178,065	175,956	166,301	159,578	163,623	168,923	174,422	169,554	182,314
Ponoka	51,402	48,673	54,127	52,919	51,275	52,182	48,698	48,379	49,449	50,937	51,092	53,124
Red Deer	239,232	224,986	245,505	251,026	252,910	226,815	236,334	244,112	232,801	235,209	234,830	245,680

TABLE II
Consumption of 2% Partly Skimmed Milk Monthly, 1966 — In Quarts

Area												
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	680,648	672,673	779,504	728,755	725,499	789,637	680,508	699,007	873,518	908,203	875,254	889,134
Camrose	—	—	—	—	—	2,364	2,608	2,770	3,033	3,225	3,178	3,206
Crownsnest Pass ..	756,079	733,068	838,465	752,477	755,949	819,215	697,350	721,696	898,030	913,501	890,569	920,961
Edmonton	74,060	70,386	74,767	74,696	76,715	78,037	75,859	78,261	88,041	90,295	87,903	89,546
Lethbridge	38,071	35,651	39,480	37,322	37,599	38,646	35,871	39,334	44,239	46,427	46,571	46,990
Medicine Hat	—	—	—	—	—	—	—	—	—	—	—	—
Ponoka	—	—	—	—	—	—	—	—	—	—	—	—
Red Deer	78,725	74,724	81,812	83,745	85,194	83,646	82,242	86,643	92,368	105,991	106,189	107,892

TABLE III
Consumption of Skim Milk Monthly, 1966 — In Quarts

Area	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	107,993	107,147	125,977	110,629	111,172	120,773	93,808	90,660	116,150	116,511	105,497	110,804
Camrose	—	—	—	—	—	—	—	—	—	—	—	—
Crowsnest Pass ..	—	—	—	—	—	—	—	—	—	—	—	—
Edmonton	123,316	119,441	137,773	121,595	123,753	129,370	101,374	95,558	126,239	126,478	120,609	129,387
Lethbridge	10,259	10,012	10,217	10,570	9,892	9,649	9,560	9,135	10,280	11,442	10,339	10,576
Medicine Hat	2,225	2,262	2,542	2,282	2,408	2,533	1,954	2,088	2,420	2,649	2,512	2,113
Ponoka	—	—	—	—	—	—	—	—	—	—	—	—
Red Deer	23,426	22,400	24,855	23,345	23,817	25,667	18,290	18,567	21,731	14,844	14,587	15,976

TABLE IV
Consumption of Chocolate Dairy Drink Monthly, 1966 — In Quarts

Area	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	108,818	104,745	133,061	116,449	103,660	93,699	88,280	86,368	102,822	99,471	88,999	97,632
Camrose	2,743	2,895	3,303	3,106	2,972	2,842	2,377	2,642	2,042	2,116	1,908	2,295
Crowsnest Pass ..	—	—	654	2,191	2,225	1,187	1,260	1,140	1,019	802	162	491
Edmonton	142,523	137,364	152,758	125,504	126,041	102,757	94,836	94,161	127,755	128,115	119,146	125,402
Lethbridge	9,821	9,534	11,240	10,378	11,564	8,310	9,076	8,738	10,086	9,590	9,231	11,298
Medicine Hat	8,233	8,721	9,957	9,318	9,497	6,039	7,394	6,894	6,818	6,464	6,110	9,054
Ponoka	943	855	823	1,295	1,879	2,027	1,783	1,365	1,367	1,087	1,235	1,596
Red Deer	8,801	8,980	9,429	10,080	9,812	6,984	7,952	8,804	7,974	6,832	6,456	6,710

TABLE V
Consumption of Buttermilk Monthly, 1966 — In Quarts

Area	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	23,669	27,317	31,127	28,522	33,941	34,299	34,551	28,195	28,639	23,999	20,855	24,045
Camrose	812	902	1,047	951	1,043	979	1,012	887	818	724	712	810
Crowsnest Pass ..	158	174	191	325	318	306	274	242	253	193	154	177
Edmonton	35,544	43,916	53,352	48,254	57,426	53,087	56,789	43,468	46,670	39,099	33,903	36,879
Lethbridge	2,691	3,292	3,434	3,352	4,644	3,794	4,777	4,144	3,755	3,323	2,937	3,276
Medicine Hat	1,644	1,987	2,502	2,240	3,246	2,556	3,407	2,525	2,012	1,638	1,456	1,662
Ponoka	274	331	393	388	370	374	400	337	307	296	301	482
Red Deer	1,731	2,007	2,223	2,322	2,760	2,339	2,552	2,192	1,806	1,756	1,575	1,725

TABLE VI
Consumption of Fluid Cream Monthly, 1966 — In Quarts

Area	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Calgary	156,568	138,749	181,275	139,515	165,786	169,003	149,023	144,537	163,202	167,951	156,206	165,991
Camrose	2,964	2,838	3,331	3,525	3,228	3,376	3,273	3,804	3,520	3,767	3,515	3,775
Crowsnest Pass ..	188	214	222	263	238	216	249	232	224	224	199	420
Edmonton	218,816	218,421	248,048	236,419	234,605	229,500	203,551	209,576	230,341	241,059	225,386	236,131
Lethbridge	18,035	17,164	18,436	17,940	15,275	16,902	16,476	19,730	17,160	17,684	17,283	19,467
Medicine Hat	10,105	10,327	11,062	10,950	10,660	10,058	10,067	10,056	9,679	10,566	9,949	11,817
Ponoka	2,243	2,180	2,476	2,411	2,295	2,403	2,201	2,663	2,353	2,362	2,398	2,605
Red Deer	10,245	10,282	10,972	10,963	10,889	9,938	11,605	11,404	10,789	11,218	10,660	11,260

TABLE VII
Fluid Milk Consumption, 1962-1966 — In Quarts
(Standard, Homo, 2%, Special, Skim)

Area	1962	1963	1964	1965	1966
Calgary	26,207,185	28,391,455	29,869,216	31,042,245	31,917,381
Camrose	797,632	839,608	848,313	847,120	816,117
Crowsnest Pass	493,656	476,773	482,778	476,390	456,512
Edmonton	33,225,546	35,698,537	36,342,594	39,541,978	40,547,753
Lethbridge	3,259,261	3,180,982	3,315,833	3,312,879	3,374,219
Medicine Hat	1,931,535	1,970,063	2,035,034	2,094,120	2,067,070
Ponoka	451,627	629,581	629,205	634,976	612,257
Red Deer	2,186,617	2,529,986	2,621,256	2,712,675	2,869,440
TOTAL	68,553,059	73,716,985	76,144,229	80,662,383	82,660,749

TABLE VIII
Fluid Cream Consumption, 1962-1966 — In Quarts

Area	1962	1963	1964	1965	1966
Calgary	1,868,209	1,848,211	1,907,100	1,932,879	1,897,796
Camrose	33,805	36,240	37,575	37,531	40,916
Crowsnest Pass	8,802	4,634	3,748	3,310	2,889
Edmonton	2,713,408	2,743,344	2,715,927	2,846,540	2,732,003
Lethbridge	233,482	224,485	231,595	222,010	211,552
Medicine Hat	129,618	130,004	131,770	132,010	125,296
Ponoka	30,775	32,179	30,607	30,007	28,590
Red Deer	129,453	131,210	128,361	129,813	130,225
TOTAL	5,147,552	5,150,307	5,186,683	5,334,100	5,169,267
Total in B.F. Equivalent —Lbs.	1,680,274	1,711,561	1,738,228	1,800,259	1,744,628

TABLE IX
Fluid Milk Purchases by Distributing Plants, 1962 - 1966 — In Pounds

Area	1962	1963	1964	1965	1966
Calgary	106,037,098	109,308,975	113,075,125	108,747,072	114,320,526
Camrose	2,706,404	2,900,792	2,951,548	2,707,417	2,629,551
Crowsnest Pass	1,429,400	1,296,300	1,329,100	1,331,400	1,405,800
Edmonton	145,051,248	147,820,425	155,864,855	155,739,003	161,532,340
Lethbridge	25,549,300	27,261,500	25,588,900	25,508,800	24,716,100
Medicine Hat	7,944,300	8,034,600	7,904,300	7,870,200	8,175,700
Ponoka	1,675,308	1,797,565	1,700,689	1,749,237	1,631,402
Red Deer	8,533,444	8,831,241	8,949,612	8,652,401	8,699,512
TOTAL Pounds	298,926,502	307,251,398	317,361,129	312,305,530	323,110,931

TABLE X
Number of Milk and Cream Producers and Distributors Operating on December 31st, 1966 under the Public Utilities Board License

Area	MILK		CREAM		TOTAL	
	Producers	Distributors	Producers	Distributors	Producers	Distributors
Bowden	1	1	—	—	1	1
Calgary	258	6	—	—	258	6
Camrose	6	2	—	—	6	2
Crowsnest Pass	5	1	—	—	5	1
Edmonton	445	5	8	—	453	5
Lethbridge	39	2	21	—	60	2
Medicine Hat	18	2	—	—	18	2
Ponoka	4	1	1	—	4	1
Red Deer	15	4	—	—	15	4
TOTAL	791	24	29	—	820	24

TABLE XI
Prices in Effect as at December 31, 1966

Area	To Producers Per 100 lbs. 3.5% B.F. \$	To Consumer Per Quart*	2% Partly Skimmed Per Quart ¢	Skim Milk Per Quart ¢	Chocolate Milk Per Quart ¢	Butter Milk Per Quart ¢	10% Substandard Per Pint ¢	32 - 34% Whipping Per Half Pint ¢
Bowden	4.56	.19	—	—	—	—	—	.27
Calgary	5.60	.26½	.24½	.19	.30	.27	.29	.36
Camrose	5.10	.21	—	.19	.24	.22	.24	.30
Crowsnest Pass	5.65	.27	.24½	.19	.30	.28	.30	.40
Edmonton	5.60	.26	.24	.19	.30	.27	.29	.36
Lethbridge	5.60	.27	.25	.19	.30	.27	.29	.36
Medicine Hat	5.60	.27	.25	.19	.30	.27	.29	.36
Ponoka	5.35	.23	.21	—	.25	.22	.24	.30
Red Deer	5.60	.27	.25	.19	.30	.27	.29	.36

*Milk to Consumer per quart price refers to Canadian standard measure of "Standard" milk delivered to "Retail Consumers"

December figures in Tables I - VI inclusive are estimates.

Homogenized quart prices same as above standard quart prices.

Exceptions: Camrose and Crowsnest Pass — 1¢ above standard quart prices.

TABLE XII

Consumer and Producer Prices in effect in specified Cities Across Canada
(as at November 1st, 1966)

	Consumer Prices Homogenized Milk — Quarts ¢	Cwt. \$	Producer Prices B. F. Basis %	Differential ¢
Charlottetown .....	.25	5.13	3.6	.06
Halifax .....	.26½	6.10	3.7	.03
Sydney .....	.27	6.40	3.7	.03
St. John .....	.28	6.00	3.8	.03
Montreal .....	.27	5.55	3.4	.06
Quebec .....	.27	5.55	3.4	.06
Toronto .....	.29	5.75	3.4	.05
Winnipeg .....	.27	5.48	3.5	.05
Regina .....	.26	5.90	3.5	.05
Edmonton .....	.26	5.60	3.5	.05
Calgary .....	.26½	5.60	3.5	.05
Vancouver .....	.29	6.716	4.0	.072

LIVESTOCK BRANCH

1966 was a year when producers were blessed with a combination of factors very helpful to livestock production. Over most of the province, grain yields were one of the highest on record with quality exceptionally high in relation to yield. Forage yields were not extraordinary but still satisfactory. Average price levels for cattle, swine and sheep were well above the previous year. This combination of adequate quantity and quality of feeds with good prices made 1966 a year that will be favorably remembered.

Cattle marketings at the public stock yards, packing plants and auction markets increased by approximately 7.5% over the previous year. Calf marketings at the same markets increased by approximately 1.2%. The price for good slaughter steers on the Calgary market hit the highest monthly average for the year in February at \$25.80 and the lowest monthly average in September at \$23.50.

Hog marketings were down 11% in volume from 1965. Marketings per week were lighter in the early months but heavier in the later months compared to 1965. The all time high price of \$40.55 per cwt. for Grade A carcasses was recorded in February during the period of lighter marketings. The low of \$27.75 was recorded in late December.

Sheep numbers again declined but at a slower rate than in 1965. The total population was estimated to be 20,000 head below the previous year (June 1st estimate). The price for market lambs was highest at \$28.50 per cwt. in April and lowest at \$18.75 in September.

CATTLE

Cattle were in good condition in most areas following the 1965-66 winter season.

Spring and early summer pastures were only fair to poor in some central and northern areas of the province.

Late summer and fall pastures were good to excellent in most areas and cattle went into the 1966-67 winter in good condition with ample feed supplies in most areas.

Cattle and calf population was estimated at 3,118,000 at June 1st, 1966, compared to 3,195,000 at June 1st, 1965.

Brand Inspection Record of Live Cattle and Calf Shipments Out of Province

	1962	1963	1964	1965	1966
British Columbia	56,543	54,459	50,308	52,564	
Saskatchewan	6,747	2,686	2,063	3,431	
Manitoba	19,868	6,960	4,712	13,914	
Ontario	81,587	70,015	80,130	89,618	
Quebec	1,776	1,105	2,904	7,622	
Nova Scotia	145	16	—	—	
New Brunswick	632	340	63	204	
United States	107,084	27,143	10,920	45,906	
Newfoundland	—	—	40	—	
Prince Edward Island	—	—	—	—	
TOTAL	274,382	162,724	151,140	213,259	

Breeders of registered beef cattle sold 3,804 bulls through 38 contributor sales approved by the Department for applications

under the Cattle Improvement Policy B. Sales were held at the following points. Grande Prairie, Olds (two), Calgary (two), Edmonton, Innisfail, Red Deer, Lethbridge (two), Camrose, St. Paul, Stettler, Vermilion, Fort Macleod (two), Mayerthorpe, Medicine Hat, Westlock, Cereal, Lloydminster, Brooks (five), High River (two), Lacombe, Drumheller, Empress, Didsbury, Hardisty, Athabasca, Coronation, Fairview, Rimbey and Sangudo.

Breed	No. Sold	Total Value	Average Price
Hereford	2,882	\$1,565,815.00	\$554.86
Aberdeen Angus	629	301,715.00	479.65
Shorthorn	263	112,225.00	426.71
Galloway	10	2,210.00	221.00

Average prices were up 80 to 100 dollars per head over 1965 prices

CATTLE IMPROVEMENT POLICIES

Bull Purchase Assistance

Policy A continued to operate on the basis of bulls being purchased by the Department as required to fill orders as received from eligible applicants.

Policy B was unchanged and applied to the 38 contributor sales listed above.

The following table shows the placement of bulls under Policy A and the numbers of bulls on which the bonus available was claimed under Policy B for the past five years.

Year	Policy "A"	Policy "B"
1962	1,248	1,563
1963	67	1,477
1964	53	1,478
1965	23	1,624
1966	37	1,350

Record of Performance Testing Program

An Annual Report of the Alberta section of the Federal-Provincial Beef Cattle Performance Testing Program is printed at the termination of each year's results in June. Copies can be obtained from the Livestock Branch.

The following table shows the extent of participation by purebred breeders in the last five years:

Year	No. of Herds	Male Calves Weighed	Female Calves Weighed	Total Calves Weighed
1962	75	1,421	1,306	2,727
1963	90	1,584	1,502	3,086
1964	96	1,853	1,747	3,600
1965	117	2,246	2,148	4,394
1966	145	2,809	2,789	5,598

In addition to the purebred herds, four members of the Alberta Beef Cattle Performance Association requested supervision of weights and approximately 800 head of commercial cattle were weighed.

The Alberta Advisory Committee of Performance Testing met on February 3 in Calgary. Recommendations from the committee included:

1. Continuance of the progeny test program initiated in 1965.

2. Approval of a privately owned bull performance Test Station at Claresholm as applied for in accordance with the Federal Bull Testing Station regulations.

Results of the progeny test pilot project initiated in 1965 were disappointing, due mainly to poor quality of semen obtained.

The probabilities of immaturity of bulls and difficulties in semen processing at such great distance from the collection point, are regarded as the two most likely reasons for poor results. The program was continued in 1966 and equipment was purchased, so complete semen evaluation, processing and storage could be conducted at the point of collection. Twenty-one bulls that scored high on performance and type under the herd test program were taken to the Vermilion College for semen collection. Satisfactory semen was collected and stored from nineteen of these bulls.

A policy for assistance to Progeny Testing of sires for beef production was established in 1966. The policy provides for payment by the Department to the operator of a progeny test station, of \$30.00 per steer that completes the test under an arrangement that meets the following conditions.

1. The grant is directly applied to offset the extra expense involved in station testing as compared to feeding and management under farm conditions.

2. The sire is a Canadian owned sire.

3. Feed conversion and carcass data are provided.

A grant under this policy was paid to the Alberta Beef Cattle Performance Association which operated a progeny test station at Bassano and tested 18 sire groups.

Grants under The Department's Municipal Scale Purchase Policy were made to the Counties of Vulcan, Lacombe, Warner, Forty Mile, and the M.D. of Westlock for the purchase of portable livestock scales.

Artificial Insemination

Reports completed in 1966 covering 1965 breedings show cow numbers, inseminated by A.I. Units, down by 208 head compared to 1964. Inseminations to dairy sires were down by 1,814 and to beef sires up by 1,506. 8,535 vials of beef semen were sold directly to 52 ranchers who serviced an estimated 7,000 cows. Including direct semen sales 90,683 cows were serviced artificially in 1965 for an over-all increase of 2,361 or 2.7% over 1964. Growing interest is evident among cow calf operators to inseminate their own cows. Three five day A.I. Stockman's Courses were held by the Industry with 54 stockmen enrolled.

Cows Bred Artificially Through A.I. Units by Breed 1960 - 1965

	1960	1961	1962	1963	1964	1965
Holstein	37,475	42,326	26,645	48,013	45,931	44,421
Ayrshire	2,934	3,051	3,060	2,669	2,625	2,343
Guernsey	1,840	2,122	2,188	2,213	2,058	1,917
Jersey	2,891	3,103	2,944	2,876	2,479	2,587
D.P. Shorthorn	1,901	2,120	2,049	1,887	1,561	1,222
Red Poll	254	252	361	126	146	269
Brown Swiss	186	847	1,270	2,022	2,469	2,865
Not Separated					169	
Total Dairy	47,481	53,821	58,517	59,806	57,438	55,624

	1960	1961	1962	1963	1964	1965
Herefords	7,509	8,195	8,684	10,018	10,824	11,442
Angus	3,479	5,604	7,271	9,147	9,366	9,544
Shorthorn	1,544	2,652	2,074	2,110	1,970	1,823
Charolais	2,450	2,790	3,369	3,425	3,587	4,896
Other	86	81	512	270	212	217
Not Separated					604	147
*TOTAL Beef	15,068	19,322	21,910	24,970	26,563	28,069
Total Breedings	62,549	73,143	80,427	84,776	84,001	83,695
Percentage Female						
Breeding Population	5.7	6.4	6.9	7.2	6.9	6.7
No. of Herds	7,796	7,940	9,287	9,572	8,664	8,481

*Includes cows of ALL BREEDS BRED to Beef Bulls.

Licenses were issued for the operation of 44 Inseminating Businesses and 10 Branch offices. One Hundred and forty (48 Class I and 92 Class II) licenses were issued to technicians authorizing the insemination of domestic animals. Twelve Class III and Two Class IV technician licenses were issued authorizing respectively the collection and initial processing of semen and the collection and final processing of semen. Fifteen permits for technicians to train were issued. Two semen producing business licenses were granted — one at Calgary and one at the Vermilion Agriculture and Vocational College.

The Second post-diploma course in Animal Reproduction was carried out at the Vermilion Agriculture College with five students graduating. Three of these graduates were employed by the A.I. Industry.

There were two new A.I. inseminating businesses established in 1966, Valleyview and Southern Animal Breeders Service at Taber.

The principles of sire evaluation were discussed with Unit directors, managers, technicians, and farmer groups. Unit reports for the first ten months of 1966 showed 31,649 cows serviced to Holstein sires: 7,480 (24%) to non proven sires; 880 (3%) to sires with an effective daughter rating below -3; 3,615 (11%) to sires rated from -3 to 0; 6,476 (20%) to sires from 0 to +3; and 13,198 (42%) over +3.

Sources of semen by units for 1965 was as follows:

	First Services	% of Total
The Ontario Association of Artificial Breeders	46,026	55
The B.C. Artificial Insemination Centre	27,302	33
American Breeders Service	10,365	12

The average non-return rate for 1965 was 71%. Nineteen percent of the cows were serviced to fresh semen and 81% to frozen semen.

Sixty-four meetings and short courses were attended with a total attendance of 1,774. Included were 15 A.I. annual meetings, 10 A.I. directors' meetings, 4 regional A.I. technician meetings, 3 A.I. Stockman's Courses, 26 extension meetings, and 3 A.I. regulation and education committee meetings. Other annual meetings attended included: The Alberta Association of Artificial Breeders, the Canadian Committee of Animal Breeders at Toronto, and the Western A.I. Technician Conference at Guelph.

Direct personal contact was made with 29 Alberta A.I. Units. Articles of information were circulated to A.I. Units, Technicians, and District Agriculturists throughout the province. Further information was given through press releases and radio broadcasts.

A survey was conducted on calf drop involving 20 ranchers using A.I. in beef herds. This represented a total of 4,925 cows eligible for A.I. service. Of this number 4,036 were serviced A.I. for a heat detection of 82%. A total of 2,927 calves were born to the A.I. services, representing 72.5% conception to the A.I. services. In July the total living calf crop to A.I. and natural service equalled 86%.

A semen processing laboratory was established at the Vermilion Agriculture and Vocational College. Personnel were provided with the necessary training to conduct the work. Semen was collected and evaluated from 24 bulls. A total of 4400 vials was processed and stored from 4 bulls from the U. of A. Kinsella Ranch, and from 19 privately owned bulls under the progeny test program.

Livestock Feeder Associations

Thirty-three feeder associations operated under the Feeder Associations Guarantee Act during the 1965-66 season. There were 1,101 active members who fed 45,143 cattle and 3,910 lambs, utilizing a credit of \$5,158,097.85.

Twenty-one associations operated under annual guarantee and twelve associations operated under continuous guarantee.

Loans outstanding at August 31st under the continuous guarantees totalled \$1,548,681.45.

South Slope Livestock Feeders' Association Limited, amalgamated with Bow Valley Livestock Feeders' Association Limited. The name of the continuing association is Bow Valley Livestock Feeders' Association Limited.

1965 - 66 Feeder Association Operations

Association	No. of Members	No. of Cattle	No. of Sheep	Credit \$
Acme	37	1,532		189,642.64
Andrew	15	436		45,723.62
Barrhead	29	999		127,171.67
* Bashaw	60	2,019		208,050.66
Battle River	58	1,897		217,742.75
Big Valley	18	731		75,897.07
* Bowden	20	932		127,406.42
Bow Valley	75	2,461	2,519	253,987.53
Cardston	22	902		89,876.65
* Carstairs	34	1,803		229,043.87
* Central Alberta	117	5,025	978	613,579.37
Central Peace	24	716		78,895.66
* Delburne	22	914		91,842.27
Drumheller	19	765		87,692.30
East Olds	42	1,886		190,392.93
Glenwood	7	274	50	27,496.62
* Grande Prairie	37	1,830		170,048.45
Innisfail	19	767		81,640.72
Knee Hill Valley	50	2,040		282,973.45

*Little Bow	39	1,607		200,127.64
Mannville	11	384		33,285.08
Marwayne	38	1,387		134,900.08
Meadowbrook	18	743		98,303.61
North Peace	19	376		31,190.44
*Okotoks	29	1,425		161,345.75
*Parkland-Stavely	44	2,436		274,119.04
Ponoka	47	1,773		239,304.85
*Raven	30	1,633		178,394.56
Raymond-Magrath	9	393		50,269.99
*Red Deer	36	1,953		221,008.79
Taber	32	976	363	113,636.67
*Vegreville	8	220		25,952.62
Western	36	1,908		207,154.08
TOTAL	1,101	45,143	3,910	5,158,097.85

*Associations operating under continuous guarantee.

Summary of Feeder Association Operations covering the past five years

Feeding Season	No. of Assoc.	No. of Members	Cattle	Sheep	Amount of Credit
1961-62	38	889	28,246	10,884	3,130,628.90
1962-63	35	1,201	38,393	7,599	4,776,559.93
1963-64	36	1,492	51,382	5,067	5,854,345.80
1964-65	33	1,033	44,459	3,966	4,199,846.77
1965-66	33	1,101	45,143	3,910	5,158,097.85

TORONTO ROYAL AGRICULTURAL WINTER FAIR

The 1966 Royal Agricultural Winter Fair was held November 11th to 19th. Alberta exhibited 17 cars of livestock, 16 of cattle and one of horses. For the first time in many years no sheep or swine were entered.

Alberta's chief livestock awards came in the market cattle division where the most notable achievements included the Champion group of five; the Champion and Reserve carload lots; the Reserve Grand Champion steer; the Champion Crossbred steer; the Champion and Reserve Champion Hereford steer and the Champion and Reserve Champion Shorthorn steer.

It was of special interest to note that the steers in the Champion carload were artificially bred in an Alberta range herd, sired by an Alberta bred bull that was purchased by an Ontario A.I. bull stud, and through progeny test completed at the Bassano test station, was certified under the certified meat sire specifications.

The exhibit was shipped via C.N.R. loading out at both Calgary and Edmonton on November 3rd. Market cattle were the strongest entries with 39 singles, 8 lots of 12 and 9 groups of 5. There were 33 beef breeding cattle, 6 dairy cattle and 15 horses.

The Alberta Department of Agriculture received nominations, co-ordinated selection, assembled the shipment and provided feed and bedding to Toronto and return. The Canada Department of Agriculture paid 75% of the freight and the Alberta Department of Agriculture 25% as in previous years. Selection of exhibits were made by persons appointed by the various breed associations under the direction of the Livestock Board.

The following table summarizes the prizes won by the Alberta exhibitors.

	Horses	Beef Cattle	Market Cattle	Dairy Cattle	Wool	Total
Reserve Grand Champion			1			1
Champion			5			5
Reserve Champion			3			3
First		2	10		1	13
Second	4	1	9		3	17
Third	1	9	5			15
Fourth	2	7	4	1		14
Other Prizes	6	19	20	3	2	50
TOTAL	13	48	47	4	6	118

Outstanding Achievements:

Byers Flour Mills, Camrose — Champion group of five steers and Reserve Champion carload of steers.

Western Animal Breeders Service (Fed by Warren Smith of Olds) — Champion carload of steers.

Floyd Bolduc, Stavelly — Reserve Grand Champion Market Steer and Champion crossbred steer.

Carol Bamford, Midnapore — Champion Shorthorn steer.

T. G. Hamilton, Innisfail — Reserve Champion Shorthorn steer.

Warren Smith, Olds — Champion Hereford steer.

Double Y Cattle Co., Balzac — Reserve Champion Hereford steer.

F. J. Aaby & Son, Edmonton — Runner-up for Premier Exhibitor and Premier Breeder awards.

SHEEP

Sheep numbers continued to decline though there were signs of an arrest in the trend. There was an increased interest in sheep production as indicated by various changes including the following: The demand for rams was such that many people had no rams left for sale at the Edmonton and Calgary Fall Sales and prices were up. The Fall Sheep Sales held in the South, again moved several thousand ewes and lambs with prices equal to or better than the previous year and without the demand from American buyers that existed in 1965. An average of five people per month inquired at this office about initiating a sheep enterprise. Others associated with the sheep industry reported similar interest. No doubt much of the increased activity can be attributed to the sustained good prices for lamb and wool coupled with the possibility of a continued deficiency of those products with accompanying high prices.

Average price of market lambs at Edmonton stockyards was \$23.50 per cwt. for good, \$21.00 per cwt. for common, and \$20.50 per cwt. for feeder lambs, representing an increase of about 14% over 1965 averages. Prices ranged between \$28.50 in April and \$18.75 in September, being influenced directly by supply, — a continuation of a long-term sheep industry characteristic. Eighty-six percent of lambs graded in Alberta were of choice and good grades. Good ewes at Edmonton averaged approximately \$7.00 per cwt. for the year, ranging between \$14.00 in April and \$4.56 in August. Common ewes averaged \$3.78.

At the four or five Fall Sheep Sales held in Southern Alberta, about 20,000 sheep were sold. The following prices prevailed: fat lambs, \$20.00 to \$23.00/cwt.; feeder lambs \$22.20-\$25.50/cwt.

(heavy); \$24.60-27.00/cwt. (light); ewe lambs \$20.00-\$26.50/cwt.; good ewes \$25.00 to \$37.00 per head; old ewes \$4.00 to \$10.00 and rams \$25.00 to \$80.00.

Sheep exports to the U.S.A. (mostly feeder lambs) were about 8,000 head.

The estimated wool sheared from Alberta sheep was 1,498,500 lbs.

TABLE I**Number and Value of Sheep and Lambs Sold at Inspected Plants in Alberta**

Year	No. Sold	Value per Animal	Sales Value
1962	197,232	14.94	\$2,947,000
1963	166,952	16.08	2,684,000
1964	166,504	17.83	2,969,000
1965	140,251	21.20	2,974,000
1966	112,200	21.44	2,406,000

TABLE II**Estimated Number of Sheep in Alberta at June 1, 1966**

Year	Number
1962	445,000
1963	424,000
1964	409,000
1965	355,000
1966	333,000

The number of rams bought by the Department of Agriculture under Ram Policies was about the same as for the previous year. (Table III)

TABLE III**Applications Processed Under Ram Policies A, B and L.L.B.**

Year	L.L.B.		Policy A	Policy B	Total
	Ewes	Rams	Rams	Rams	Rams
1962	—	3	30	45	78
1963	—	3	36	26	65
1964	—	3	34	35	72
1965	2	2	36	57	95
1966	134	4	35	51	90

Ram numbers at the Calgary and Edmonton Purebred Sales were about the same as in the previous year and prices were up slightly.

TABLE IV**Ram Numbers and Prices at Purebred Sheep Sales, Calgary and Edmonton**

	1964		1965		1966	
	No.	Av. Price	No.	Av. Price	No.	Av. Price
Rams						
Suffolk	57	62.45	79	70.54	74	74.90
Hampshire	16	44.06	17	55.74	13	72.04
Border Cheviot	2	45.00	1	50.00	1	50.00
N.C. Cheviot	19	51.05	12	61.67	13	74.62
Corriedale	10	68.00	15	70.83	16	72.81
Southdown	4	47.50	2	65.00	1	60.00
Oxford	—	—	2	49.00	5	67.00
Total and Average	108	56.53	128	67.20	123	73.65

A wider difference prevailed between Grade A and Grade B ram prices at sales. (Table V)

TABLE V
Average Price of "A" and "B" Rams, Calgary and Edmonton Sales

Year	"A" Grade Rams		"B" Grade Rams	
	Number	Price Average	Number	Price Average
1962	82	52.89	14	39.65
1963	42	64.94	31	50.46
1964	77	60.49	31	49.59
1965	83	70.58	45	59.00
1966	71	83.73	52	62.30

No specific programs were carried out in 1966 besides the regular short courses, farm visitation, culling at sales and buying of sheep under Departmental Policies. Evidence of interest in community sheep pastures, lamb marketing associations, intensifying sheep production knowledge by use of specialized schools and the importation of specialized foreign breeds, indicated an awakening to some basic factors for industry improvements in keeping with other livestock enterprises.

SWINE

This was considered to be a highly successful year for the Swine Industry both Provincially and Nationally. An all time high price of \$40.55 per cwt. for Grade A carcasses at Edmonton was reached during the week ending February 17th. For that month an average of \$40.24 was realized, but beginning in early March, prices fluctuated between \$30.00 and \$36.00 until December, then dropped to a low of \$27.75 just before Christmas. The average Edmonton price for the entire year was \$33.27, up \$4.71 over the 1965 average.

The outlook for swine production appeared favorable when viewed from its competitive position with other meat producing animals.

The floor price of \$23.65 per cwt. for A grade carcasses, basis Toronto, was still in effect.

The continued trend of establishing highly capitalized and specialized production units served to further consolidate stability in the industry with less probability of extreme over supply or under supply situations.

Producers were taking a serious look at crossbred pigs for commercial production with a number of quite large operations becoming established. The American Hog Company established a number of "Hi-Lean" operations in southern areas. However, not enough care was being exercised in selection of animals or breeds, hence the grades received were well below the provincial average. Interest in Connaught pigs did not increase and producers were advised, if entering a crossbreeding program, to initially at least, rely on the three Canadian white breeds.

Compilation of data from the S.P.F. test trial conducted at Lacombe and Edmonton R.O.P. test stations in 1965 indicated that these animals were not genetically superior, and further, that performance was no better than could be expected from well managed, well cared for animals of non-S.P.F. origin. Interest in this type of production did not increase in 1966 but the number

of herds enrolled in the Minimal Disease Program increased 25% with 40 herds taking advantage of this service.

Continuing the C.F.A. sponsored national conferences on the various aspects of the Canadian swine industry, one meeting was held at Ottawa in July. This Division was represented by its Director and the Livestock Supervisor for Sheep and Swine. Two recommendations came out of this conference; a) to adopt a method of settlement to producers based on a grading or rating system which 'predicts percentage yield of lean content', and b) to establish a national producers' organization to be known as the Canadian Swine Council. Mr. S. Price of Alberta was named as president. The first responsibility of this organization was to act on the recommendation on grading, but its function was designed to further the interest of all aspects of the swine industry on a national level.

At year end the A-B-C- grading system was still in effect as was the \$3.00 Federal premium for carcasses of A grade.

Opposing views of different factions of the Alberta Swine Council relative to proposed Alberta swine marketing legislation were not resolved at year end.

The Alberta R.O.P. Swine Committee met twice to review and make recommendations relevant to changes in the National R.O.P. policy, and the Probe-Weight Home Test, a pilot study being conducted in this province. Nine herds were enrolled under the Probe-Weight program early in 1966 and at year end data was becoming available.

The Livestock Supervisor for sheep and swine was appointed as an additional Branch representative on the Alberta R.O.P. Swine Committee.

Under the National R.O.P. test program during the period April 1st, 1965, to March 31st, 1966, 59 breeders (50 Alberta, 9 British Columbia) tested 181 litters in Alberta test stations. These were made up of 92 Yorkshire, 79 Lacombe and 10 Landrace. All of the Landrace litters were from British Columbia. Another 27 litters were home tested, 17 Yorkshire and 10 Lacombe by 16 breeders. In addition there were 32 groups of four pigs each of S.P.F. origin unofficially tested. This gave a total of 213 groups tested at the two Alberta R.O.P. Stations during 1966 as compared to 156 in 1965 and a 1961-65 average of 150.

The policies relevant to swine continued without change. Details of animals placed and bonus payments are given in the accompanying tables. Included also are tables giving comparative prices for breeding stock at the purebred sales, Alberta's position in the overall swine industry with respect to grades, pig numbers and value. Price average covering all Alberta sales (including R.O.P.)

BREED	1965		Boars		1966		1965		Sows		1966	
	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price
Yorkshire	424	115.29	448	143.87	523	99.61	464	140.73				
Tamworth	16	106.10	12	97.50	7	83.93	1	102.50				
Landrace	5	62.51*	3	105.00	14	63.04*	6	91.25				
Lacombe	56	140.56	76	139.74	81	107.07	64	126.60				
Total & Av.	501	117.29	539	142.04	625	99.58	535	138.41				

*No Landrace sold at any of the 1965 Fall Sales when prices for breeding stock were high.

Price Average for all Swine Breeds at Calgary and Edmonton Sales

	1965		1966	
	No.	Average Price	No.	Average Price
Boars	258	124.27	259	160.79
Sows	367	98.46	315	152.81

Price Average of Lacombe Breed Special Sale

	1965		1966	
	No.	Average Price	No.	Average Price
Lacombe Boars	14	146.96	11	104.09
Lacombe Sows	25	112.40	22	101.47

Price Average at Camrose R.O.P. Swine Sale

	Boars				Sows			
	1965		1966		1965		1966	
BREED	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price
Yorkshire	35	123.71	48	161.04	33	100.99	34	117.41
Lacombe	7	95.71	10	124.50	6	95.00	6	114.16
Total & Av.	42	119.04	58	154.74	39	100.07	40	116.92

Swine Placed Under Livestock Listing Bureau and Improvement Policies A and B

Year	L.L.B.		Policy A	Policy B
	Gilts	Boars	Boars	Boars
1962	7	22	162	341
1963	13	25	106	373
1964	4	7	93	405
1965	39	19	94	332
1966	2	15	84*	347

*This total includes 48 Yorkshires, 26 Lacombes, one Tamworth and nine Landrace.

Record of Performance Sow Bonus Policy

Number of Sows Qualifying for Bonus:

Breed	1962	1963	1964	1965	1966
Yorkshire	20	33	54	54	111
Landrace	—	1	—	—	—
Lacombe	13	22	18	26	61
Total	33	56	72	80	172

Alberta Hog Grading for Years 1962 - 1966

Grade	1962 %	1963 %	1964 %	1965 %	1966 %
A	33.10	35.10	36.30	40.30	42.80
B	43.10	42.90	45.20	43.00	41.00
C	8.10	7.40	8.20	7.10	6.70
Light	3.40	2.60	2.80	3.20	2.00
D	1.10	0.70	0.70	0.80	0.50
Heavy	3.60	4.40	4.30	3.50	4.50
Extra Heavy	1.60	1.80	1.90	1.50	1.80
Injured	—	—	—	—	—
Ridgling	0.50	0.60	0.60	0.60	0.60
Stags	0.60	0.40	0.50	0.45	0.40
Sows	4.70	4.10	4.70	4.20	3.60

1964, 1965 and 1966 grading percentages exclude stags and sows.

Number and Value of Inspected Slaughter Hogs of Alberta Origin			
Year	Total Number	Value per Pig	Total Sale Value
1962	1,674,177	39.80	68,611,312.00
1963	1,350,490	41.22	55,667,363.00
1964	1,554,404	37.52	58,321,238.00
1965	1,634,390	44.44	72,635,358.00
1966	1,350,670	52.73	71,224,204.00

Estimated Number of Swine on Alberta Farms at June 1, 1962, to 1966 Incl.

1962	1,200,000
1963	1,165,000
1964	1,370,000
1965	1,245,000
1966	1,208,000

FEED RECOMMENDATION SERVICE

During the year, from data gained from 1530 feed samples analyzed, 739 feed reports were sent out by the Agricultural Soil and Feed Testing Laboratory. This compares to 754 reports sent out during the previous year from 1620 samples analyzed.

Where ration information sheets were completed ration recommendations were sent with the analytical results. Of the 368 recommendations made, 248 were for beef cattle, 78 for dairy cattle, 34 for swine and 2 for horses. As in previous years beef producers used this service to greater extent than dairy, swine or sheep producers.

While only half the farmers, who submitted samples, completed information sheets, this was an increase over previous years. In some cases the amount of information supplied was barely adequate for specific recommendations.

DAIRY HEIFER CALF POLICY

This policy operated as in previous years. The Branch assembled and delivered 111 Holstein heifer calves to 15 different 4H dairy clubs.

Even though artificial insemination has become widespread in the province and the distribution of good quality dairy cattle has resulted, it was still difficult for many clubs in certain areas to obtain project calves locally.

HORSES

The population of horses on Alberta farms at June 1st was estimated at 89,000 head, a decrease of 3.2% from the previous year. Auction markets reported an increase of 23% in sales and horses sold through all markets totalled 16,900 head.

Active interest was maintained in the breeding of light horses, and the demand for quality heavy horses exceeded the supply.

The meat horse trade established the value of non-breeding horses with the exception of the sale of pregnant mares. There was a strong demand for in-foal mares as the urine collection market was extended to Alberta.

RECORDING OF BRANDS

Summary of Brand Registrations, Transfers, Renewals and Cancellations

	Cattle	Horses	Sheep	Poultry	Fur Bearing	Total
New Brands Issued	1,463	147	1	—	—	1,611
Transfers Registered	434	37	—	—	—	471
Certified Extracts Issued	4	—	—	—	—	4
Brands Cancelled	305	44	6	2	—	357
Brands Renewed	6,905	784	3	3	—	7,695
Brands Reissued	60	10	—	—	—	70
	<u>9,371</u>	<u>1,022</u>	<u>10</u>	<u>5</u>	<u>—</u>	<u>10,208</u>

The number of brands in good standing at December 31, 1966

Cattle	35,686
Horses	3,912
Sheep	21
Poultry	5
Fur Bearing	2
Total	<u>39,626</u>

There was a total of 2629 letters written during the year, which dealt with the new applications, transfers, unregistered brands, and other items pertaining to the work carried on in the Brand Office.

ALBERTA LIVESTOCK & LIVESTOCK PRODUCTS ACT

Stockyards and Stockyards Licensing

Three hundred and thirty-one stockyard licenses were issued in 1966, compared to three hundred and fifty-six in 1965.

Two new Class D Stockyards were opened in 1966 and one Class D Stockyard was closed, resulting in three hundred and thirty Stockyards being in operation at the end of 1966.

Class	B	C	D	E	F	G	Total
	<u>16</u>	<u>35</u>	<u>55</u>	<u>2</u>	<u>4</u>	<u>219</u>	<u>= 331</u>

A total of 54 Class D Stockyards (Auction Markets) were in operation at December 31st, 1966.

The following table shows the number of livestock sold at Class D Stockyards during the years 1962 to 1966.

	1962	1963	1964	1965	1966
Cattle & Calves	396,800	424,551	470,330	514,327	559,379
Hogs	271,754	293,779	434,328	364,807	331,715
Sheep	41,919	31,797	30,336	32,470	32,375
Horses	10,935	9,729	11,505	7,597	8,725

Class E and F Stockyards which operated at Lundbreck, Pakowki, Park Bend, Walsh, Lea Park and Empress handled 16,225 head of cattle in 1966 compared to 19,852 in 1965.

LIVESTOCK DEALERS AND LIVESTOCK DEALERS' AGENTS

Several changes were made in the Livestock Dealer's Regulations and became effective on October 28th. Basic to the changes was provision for a Livestock Producers Assurance Fund to be accumulated by an increase in dealer license fees to range from \$50.00 to \$200.00 depending on the amount of livestock handled. The proceeds from each license fee, less \$10.00, is deposited in the fund. This fund is designed to provide protection in the case of default by a dealer, in addition to that provided by the bond. The license fee for livestock dealers' agents was increased to \$10.00.

It was necessary to recall the proceeds from one \$10,000 bond in 1966, which was not adequate to pay 56 patrons in full. Payment from the bond was at the rate of 82.85% on the dollar.

Dealers and Agents totalled 900 in 1966, compared to 884 in 1965. There were 8 prosecutions and several warnings were issued for dealing without a license.

A number of trade practise investigations were made as a result of complaints from producers, market operators and shippers of livestock. Stockyards were visited as often as possible.

THE STOCK INSPECTION ACT

Brand Inspection was applied to four new points at Morinville, Boyle, Thorhild and Rocky Mountain House, plus three slaughtering plants, making a total of 82 regular points of inspection. In addition, numerous inspections of export cattle were made at feedlots and loading points.

A total of 2,068,326 head of horses and cattle were inspected through markets and on export. This was a 15% increase over 1965 inspections.

Inspectors held up proceeds of sale or actual animals, for a total of 5,690 head for further investigation of rightful ownership. The proceeds of sale covering 216 head were forwarded to the Branch headquarters for further investigation. Of the total held, 108 head of live cattle and the proceeds from the sale of 159 head were returned to the rightful owner other than the shipper, and 38 head are still under investigation. Approximately 5% of the total number of cattle held were illegally shipped.

A new method of branding known as freeze branding was made public in the United States and Canada. There has been some use made of this method throughout the Province with conflicting reports of its effectiveness.

Two hundred and sixteen Butcher's and Hide Dealer's Licenses were issued during 1966, a decrease of one from 1965. Most butchers were visited at least once this year. Their premises and records were checked and discussed with them.

Several theft cases were initiated as a result of the inspections at the markets which lead to searches being made of several farms, ranches and feedlots in co-operation with the R.C.M.P.

POUNDS

Two new pounds were organized under The Improvement Districts Stray Animals Act, bringing the total number of pounds in Improvement Districts to 156.

Several county and municipal districts were assisted with various pound inquiries. Characteristic of most areas was the declining number of people who were willing to accept the position of poundkeeper.

THE HORNED CATTLE PURCHASES ACT

The percentage of horned cattle marketed at various market points remained virtually the same as the previous year. The provincial average increased from 10.2% in 1965 to 10.7%. This tended to refute the belief that sudden increase from 1964 to 1965 was due to extreme weather conditions at critical times of year that had reduced dehorning of calves by second owners. Continuation at a high level would tend to support the school of thought that attributes an increase at this time to greater concentration of the cow-calf type of production with less attention to dehorning of calves. In any case the exemption of cattle under the weight of 400 pounds appears to have neutralized the effect of the penalty when such a large percentage of the cattle marketings results from primary producers selling calves.

The following table shows the percentage of cattle with horns at the main market centres for the past 4 years with a base point of 1949.

	1949	1963	1964	1965	1966
Edmonton	19.9	11.2	10.9	14.4	14.5
Calgary	15.6	5.9	5.6	7.0	7.9
Lethbridge	—	7.3	5.4	7.0	7.3
Medicine Hat ...	—	3.5	4.5	4.1	3.8

GENERAL

The Branch co-operated closely with the Extension Branch in developing and co-ordinating an effective livestock extension program. In addition to administration of the various livestock policies and programs, Branch personnel serviced numerous extension meetings, short courses, field days, demonstrations, schools, livestock shows, etc., and served on a number of Boards and Committees. Mr. Gordon assumed the duties of chairman for the Alberta Livestock Board, the Alberta R.O.P. Swine Advisory Committee, the Alberta Beef Cattle Performance Test Committee and the Alberta Artificial Insemination Advisory Committee. The Director continued to represent the Department on the Alberta Meat Industry Co-ordinating Committee. He also represented the Department at national meetings in connection with revised hog grading plans and with national R.O.P. swine policy. The Director and Mr. Link attended the National Livestock Brand Conference at Dodge City, Kansas, where it was determined that the 1967 Conference would be held at Calgary, with Alberta as the host member.

Following is a summary of official duties conducted by Branch personnel.

Farm Visits	Meetings and Short Courses	Livestock Judging Assignments	Culling and/or Purchasing at Sales	Stockyard Visits	Radio and TV Appearances	"Farm Notes" Articles
905	249	20	63	767	32	39

Numerous staff changes took place during the year. It is with deep regret that the sudden death of Donald Fairfield, brand inspector at Edmonton is reported. Mr. Fairfield, a young man in the service, died on November 9 after a brief illness.

The retirement of Mr. A. J. Charnetski in March terminated a highly successful and respected career in livestock extension and administration, approximately 25 years of which was spent in the specialty of sheep and swine work.

Mr. J. J. Kallal left the service by resignation on March 31, after 12 years of excellent service to the beef cattle industry. New appointments to technical staff were; Mr. P. Jerome Martin, Nutritionist and feed testing; Mr. J. L. Kerns, Supervisor, beef cattle; Mr. V. M. Gleddie, Supervisor, sheep and swine. New appointments in the brand inspection staff were; J. Audet and W. Franz at Lloydminster, D. Melvin and L. Doan at Edmonton and R. Warford at Red Deer. Deputy Brand Inspectors appointed were; N. Schnell, J. Rettie, W. Campbell, C. Howe, D. Fitzpatrick, H. Cameron, W. Kirkham, W. Jans, D. Keay, C. Vold, J. Kallal and L. McKinney. Terminating employment with the stock inspection service were S. Thuesen, T. Hall, M. Sutherland, J. Robbins, R. Weir and G. Hardy.

POULTRY BRANCH

The total volume of production of commercial eggs through registered egg grading stations showed a slight increase over 1965. This was partially due to more specialized producer-graders selling through registered egg grading stations, who had previously marketed their own production.

It was noted, as in 1965, that farm run, mixed color shell eggs were subjected to lower prices, while quality white shell eggs held firm throughout the year. Farm pick-up or procurement of product by city dealers continued in an increased radius, resulting in loss of product for rural egg grading stations. There were 90 egg grading stations operating in 1966 compared to 95 in 1965.

The weighted average egg price to producers increased 4 cents per dozen over 1965. The Federal Deficiency Payment Program continued in effect for 1966, however, as the weighted average paying price across Canada was above the stated minimum, no payment was required for the production period October 1, 1965, to September 31, 1966.

Year	Egg Station Receipts 30. doz. cases	Chicken Broiler Evisc. Wgt. Reg. Stations	Turkey Broiler Evisc. Wgt. Reg. Stations	Heavy Turkey Evisc. Wgt. Reg. Stations	Total Turkey Evisc. Wgt. Reg. Stations
1965	468,198	22,245,000	1,455,000	12,722,000	14,177,000
1966 (est)...	475,487	25,400,000	2,197,150	13,040,891	15,238,041

The broiler chicken market held firm with prices comparable to those of 1965 until October, when a small decrease in producer price took effect.

The turkey industry showed a slight increase in marketings due mainly to greater broiler turkey production. Prices to producers were a little stronger than those prevalent in 1965. Increased feed costs offset any price advantage.

A producers marketing board for broiler chicken was voted upon and passed by a strong majority of those producers involved. The Alberta Broiler Growers Marketing Board became operative September 1, 1966.

A producers marketing board for turkeys was voted upon and passed by the majority of those producers involved. The Alberta Turkey Growers Marketing Board approved in December, 1966, did not become operative.

Year	Total Eggs Produced Millions of dozens	Weighted Egg Prices to Producers as Determined by Registered Egg Station Receipts
	Alberta	Alberta
1962	39.3	25.0
1963	37.0	27.1
1964	38.5	21.8
1965	36.6	31.4
1966	37.5 (est.)	34.0

FLOCK APPROVAL

The pullorum testing and banding of chicken and turkey hatching egg supply flocks continued in 1966. To handle the bulk of this work eight temporary inspectors were employed from September through December. Females tested for egg replacement purposes in 1966 were 3.1% less than 1965 and females tested for broiler production showed a decrease of 4.3%. Turkey females tested increased by 4.3%.

All hatching eggs set in licensed hatcheries must be from inspected and pullorum disease free flocks. Table I summarizes the number of flocks and birds inspected and tested for pullorum disease.

TABLE I
FLOCKS AND FEMALES TESTED, ALBERTA EGG REPLACEMENT AND BROILER

(First Test on Completed Flocks)

Year	Method of Testing	No. of Flocks		No. of Birds	
		Egg	Broiler	Egg	Broiler
1965	Whole Blood	231	245	125,082	170,940
1966	Whole Blood	209	201	121,102	163,467
AVERAGE SIZE OF FLOCK					
		Egg	Broiler	% REACTION	
1965		541	697	.003	
1966		579	813	nil	

Table II summarizes total turkey flocks and turkeys inspected and banded.

TABLE II**SUMMARY OF TURKEY APPROVAL 1964-1966**

Year	No. of Flocks	No. of Birds	Average Size of Flock
1964	23	45,395	1,973
1965	25	49,948	1,998
1966	21	52,140	2,482

In 1966, 60.3% of the turkey hatching egg supply flocks were Broad Breasted Bronze, 29.9% Large Whites and 9.8% Small Whites as compared to 78.0%, 16.6% and 5.4% respectively in 1965.

LICENSING AND BONDING OF DEALERS IN POULTRY AND POULTRY PRODUCTS

A. PRODUCE

The Poultry Branch administers Regulations Respecting the Licensing and Bonding of Dealers in Poultry and Poultry Products under the Livestock and Livestock Products Act. Every person carrying on a business as a dealer must obtain a license to conduct such business. As of January 1, 1956, as protection to producers, all wholesale dealers were required to furnish a surety bond in favor of the Minister ranging from \$1,000 to \$10,000 dependent upon the volume of business conducted.

TABLE III

Year	First Receivers	Reg. Egg Grading Stations	Reg. Poultry Processing Stations	Reg. Poultry Eviscerating Stations	Reg. Poultry Grading Stations	Temporary Grading Stations	Poultry Packing Stations
1962	12	125	19	11	8	0	8
1963	10	119	19	11	7	0	9
1964	18	112	19	11	7	0	15
1965	22	95	14	11	6	0	21
1966	30	90	14	11	5	0	22

B. HATCHERY

The Poultry Branch administers Regulations Respecting the Production and Sale of Chicks Under the Alberta Livestock and Livestock Products Act. All commercial and custom hatcheries with an incubator capacity of 1,000 eggs or more are licensed. Since 1951 commercial hatcheries are required to furnish a surety bond, in favor of the Minister, for protection of hatching egg producers, ranging from \$2,000 to \$5,000 dependent upon incubator capacity.

TABLE IV**DEVELOPMENT OF HATCHERIES**

Year	Breeder Hatcheries	Commercial Hatcheries	Setter Capacity	Hatcher Capacity	Total
1964	7	37	3,489,636		
1965	6	33	4,732,920	778,889	5,511,809
1966	6	33	4,721,200	789,544	5,510,744

TABLE V
CHICK DISPOSITION

Year	Hatch- ability	Chicks Hatched	Chicks Not Sold	Chicks Exported	Chicks Imported	Chicks Remaining in Province
1962	70.1	13,084,102	881,652	598,122	569,273	12,173,601
1963	70.2	15,070,648	1,091,460	606,641	879,505	14,252,052
1964	68.7	15,701,591	1,258,299	368,152	481,435	14,556,575
1965	67.4	15,081,002	1,279,299	597,039	617,057	13,821,721
1966	70.4	17,261,381	1,393,803	1,106,546	294,538	15,055,570

TABLE VI
CHICK PRODUCTION BY TYPE

For Egg Production Type			For Broiler Production Type		
1966	1965	% change	1966	1965	% change
5,715,160	5,463,418	4.6%	11,546,221	9,617,584	20.0

TABLE VII
POULT PRODUCTION

Year	Eggs Set	Eggs Imported	Poults Hatched	% Hatch- ability	Poults Imported	Poults Exported	Poults on Alberta Farms
1962	2,667,391	613,619	1,375,515	51.3	14,040	41,944	1,347,611
1963	2,362,591	207,194	1,291,485	54.6	58,048	86,028	1,241,742
1964	2,099,610	463,444	1,136,876	54.1	41,946	48,499	1,130,323
1965	2,095,189	376,753	1,216,805	58.1	96,912	69,387	1,244,330
1966	2,434,267	587,738	1,261,153	51.8	20,250	75,522	1,205,881

Poult production in Alberta hatcheries in 1966 was 1,261,153 poults, an increase of 3.6% over 1965.

Importation of U.S. franchised strains remained fairly static in 1966. These accounted for 78% of the White Leghorn type chicks, 85% of the chicken broiler type chicks, and 80% of the meat type turkey poults.

TABLE VIII
IMPORTATION FROM THE UNITED STATES
1966

	CHICKEN				TURKEY			
	From Egg Production Matings	Eggs	Chicks	From Broiler Production Matings	Eggs	Poults	From Meat Production Matings	From Broiler Production Matings
January	—	4,204	—	4,608	—	—	8,600	—
February	—	12,102	—	12,737	14,600	—	25,800	—
March	—	2,619	64,039	20,108	95,000	—	72,872	—
April	—	13,350	283,996	29,102	121,896	—	27,000	—
May	—	8,439	42,974	25,324	31,800	8,900	4,400	—
June	—	—	—	31,543	—	9,300	11,995	—
July	—	5,327	—	8,711	—	—	10,400	1,700
August	—	—	—	37,752	—	—	19,400	—
September	—	—	—	38,897	—	—	12,193	—
October	—	2,460	—	5,098	—	—	24,200	—
November	—	—	19,440	29,252	—	—	34,000	—
December	—	2,860	—	50	—	—	29,594	350
Total	—	51,361	410,449	243,182	263,296	18,200	280,454	2,050

THE POULTRY INDUSTRY

Egg marketings at registered stations are indicated in Table IX. These receipts represent an estimated 47% of the total production, up some from 1965. Weighted egg prices to producers increased 4 cents per dozen over 1965.

TABLE IX

	Egg Receipts at Registered Egg Grading Stations (30 dozen cases)	Weighted Egg Price to Producers by Grade per Dozen
1962	473,071	25.0 cents
1963	442,725	27.1 cents
1964	486,597	21.8 cents
1965	468,198	29.8 cents
1966	475,487	34.0 cents

TABLE X**POULTRY EVisCERATED IN REGISTERED STATIONS**

(pounds)

CHICKENS

Year	Under 4 lb.	Over 4 lb.	Fowl	Ducks	Geese
1962	14,031,000	870,000	2,185,000	5,000	470,000
1963	18,448,000	641,000	2,118,000	6,000	434,000
1964	21,962,000	1,108,000	2,434,000	19,000	457,000
1965	22,245,000	783,000	2,082,000	3,000	439,000
1966	25,400,000	999,502	2,253,739	1,084	112,000

TURKEYS

Year	Under 10 lb.	10 to 16 lb.	Over 16 lb.	Total
1962	492,000	4,352,000	7,328,000	12,172,000
1963	750,000	4,446,000	8,248,000	13,444,000
1964	1,223,000	4,022,000	7,332,000	12,577,000
1965	1,455,000	4,418,000	8,383,000	14,256,000
1966	2,197,150	4,420,191	8,620,700	15,238,041

The laying hen numbers and market turkey numbers on Alberta farms is indicated in Table XI.

TABLE XI**FARM POPULATION**

Year	Laying Birds	Turkeys
1962 (DBS)	2,400,000	820,000
1963	2,170,000	765,000
1964	2,280,000	750,000
1965	2,325,000	900,000
1966 (est.)	2,769,000	835,000

ALBERTA RANDOM SAMPLE TEST

The Alberta Random Sample Test, completing the 500 day egg production test period in August, showed the highest level of performance achieved at this Test. The average egg production was 242.8 eggs, with the highest producing entry laying 273.3 eggs.

Eleven egg production strains were tested, representing commercial stock from breeders in Alberta, Saskatchewan, Manitoba, Ontario, California, New York, and Kentucky. Most of these stocks were widely distributed in Alberta. All factors of economic importance were evaluated for each stock and compared one against the other.

The following Table compares average egg production and average laying house mortality for the nine completed tests:

Test	Egg Production per Hen Housed	Laying House Mortality
First	201.2	14.8%
Second	219.7	10.7%
Third	213.8	9.0%
Fourth	229.3	6.6%
Fifth	226.0	5.4%
Sixth	217.4	10.7%
Seventh	238.2	3.6%
Eighth	239.1	5.8%
Ninth	242.8	5.6%

The following table indicates the performance in some of the factors tested of entries in the Ninth Test:

NINTH ALBERTA RANDOM SAMPLE TEST

Entrant	Egg Prod. Per Hen Housed	% Grade A Large Eggs	% Laying House Mortality	Lbs. Feed per dozen Eggs	Net Income Per Hen Housed
1	216.7	62.6	12.0	5.0	\$1.67
2	243.3	72.2	4.0	4.6	2.50
3	273.3	71.5	3.0	4.5	2.84
4	249.3	65.1	4.0	4.3	2.62
5	242.5	57.6	7.0	4.7	2.17
6	250.0	68.2	3.0	4.8	2.24
7	251.6	66.0	5.0	4.6	2.56
8	231.2	69.4	6.0	4.8	2.09
9	236.5	55.9	6.0	4.7	2.00
10	222.8	64.9	10.0	5.1	1.69
11	253.2	56.8	2.0	4.5	2.38
Average	242.8	64.5	5.6	4.7	2.25

Detailed reports were forwarded to the entrants at three month intervals, and the final report distributed to a large mailing list and made available for publication in poultry journals. Also, results of the Test, as well as results of research and practical experience were passed on to producers, hatcherymen and interested persons by members of the Poultry Branch staff.

This was the final Test to be conducted at the Oliver farm. New facilities were under construction to conduct applied research projects with egg laying stock and chicken broilers.

POULTRY SHOW

The 52nd Annual Provincial Poultry Show was held in Calgary in December. Entries were comparable to 1965 and increased in some classes. Auction of dressed poultry netted satisfactory returns. An innovation this year was the auction of live fancy and bantam stock. Considerable interest was shown by the public.

The Vermilion Turkey Club continued this year and held a successful dressed turkey show on its achievement day. No live show was held.

BRANCH ACTIVITIES

The following Table indicates the number of farm calls and meetings requested and attended by members of the Branch:

Service Calls				Meetings			
1963	1964	1965	1966	1963	1964	1965	1966
1,438	1,659	1,478	1,548	44	37	39	89

In addition there were 592 calls to allied trades, 485 to surveys and studies and 54 radio and television appearances.

Poultry councils, producer associations, the hatchery and produce associations continued active throughout the year being concerned primarily with marketing and promotion matters.

The 16th Annual Poultry Industry Conference jointly sponsored by the Alberta Hatchery Association, Veterinary Services Division and Poultry Branch was held in Calgary.

As requested by the industry in total, the Branch continued preparation and release of estimated costs of production data, and broiler production and situation analyses monthly. In addition a broiler hatching egg cost study was initiated.

Specific projects and studies carried out by the Poultry Branch were:

- 1) Producers Vendor Survey
- 2) Hatchery Sanitation Program
- 3) Hatchery Sanitation Assessment Project
- *4) Salmonella Project
- 5) Egg Residue Survey
- *6) Turkey Health Program
- 7) Egg Quality Project
- 8) Broiler Cost Comparison
- 9) Broiler Situation Analysis
- *10) Broiler Hatching Egg Cost Study
- 11) Commercial Egg Cost Study

*Initiated in 1966.

The Poultry Branch Supervisor attended the annual meeting of the Canadian Hatchery Association held in Regina, Saskatchewan. The Poultry Commissioner attended the annual meeting of the Western Canada Produce Association (Western Division) held in Winnipeg, Manitoba. He and members of the Poultry Branch served on committees of various industry organizations and attended many meetings of industry groups.

ACKNOWLEDGEMENTS

The Division received excellent support and co-operation from both producer and commercial segments of the various dairy, livestock and poultry interests. It also enjoyed the full co-operation of the R.C.M. Police in matters of investigation and enforcement, and of the Federal Production and Marketing Service in matters of mutual concern. The assistance and co-operation of these agencies is much appreciated and is hereby acknowledged.

Report of the Extension & Colleges Division

S. S. GRAHAM, B.Sc., P.Ag., Director, Extension and Colleges Division

Extension Branch

HEADQUARTERS PERSONNEL

L. W. RASMUSSEN, B.S.A., M.Ed., P.Ag., Supervisor of District Agriculturists
 C. A. CHESHIRE, B.E., P.Ag., Supervisor of District Agriculturists
 G. L. GODEL, B.S.A., M.Sc., P.Ag., Acting Supervisor of District Agriculturists
 Mrs. V. G. MACDONALD, B.Sc., Supervisor of Home Economics Section
 Miss PATRICIA MASCALUK, B.Sc., Home Management Specialist
 Mrs. MARION ATKINSON, B.Sc., Extension Clothing Specialist
 Mrs. DONNA BAGDAN, B.I.D., Home Design Specialist
 Miss DOREEN STRYNADKA, B.Sc., R.D., Food and Nutrition Specialist
 J. L. REID, B.Sc., B.S.A., M.Sc., P.Ag., Senior Extension Engineer
 BRIAN WEST, B.Sc., Assistant Extension Engineer
 WARREN WISMER, B.S.A., Supervisor, Radio and Information Section
 JOHN ANDREW, B.Sc., Senior Commentator, Radio and Information Section
 LYNN MALMBERG, B.Sc., Commentator, Radio and Information Section
 Miss DIANA RODNEY, B.A., Information Officer,
 Radio and Information Section
 JACK ART, M.A., B.S.A., P.Ag., Research Information Officer,
 Radio and Information Section
 ELLIS TREFFRY, B.Sc., P.Ag., Agricultural Weather Forecaster,
 Radio and Information Section
 J. M. FONTAINE, B.Sc., P.Ag., Supervisor, Publications and Visual Aids

DISTRICT OFFICES AND PERSONNEL

Office and Agriculturist

Athabasca

D.A. to be appointed
 R. Winchell, B.Sc., Ass't.

Barrhead

W. C. Yule, B.Sc.

Berwyn

G. R. McNaughton, B.Sc., P.Ag.

Bonnyville

D.A. to be appointed

Brooks

I. Lapp, B.Sc., P.Ag.

Calgary

A. W. Beattie, B.Sc., P.Ag.
 A. Reimer, B.S.A., Associate
 G. W. Law, B.Sc.,
 Regional Extension Engineer

Camrose

L. D. Williams, B.Sc., P.Ag.
 R. Berkan, B.S.A. (Assistant)

Cardston

D. L. Steed, B.Sc., P.Ag.

Home Economist

Miss J. Friedrich, B.H.Ec.

Miss L. Sorensen, B.Sc.

Mrs. N. J. Gray, B.Sc.

Mrs. I. Leavitt, B.Sc.
 Miss D. Hammer, B.I.D.,
 Home Design Specialist

Miss I. Eby, B.Sc.

Office and Agriculturist**Claresholm**

J. D. Jantzie, B.Sc., P.Ag.

Coronation

W. Dietz, B.Sc., P.Ag.

Drumheller

S. W. Pettem, B.S.A., P.Ag.

Edmonton, South

H. J. Fulcher, B.S.A., P.Ag.

F. H. Schulz, B.Sc. (Associate)

Evansburg

W. A. Morrison, B.Sc.

Fairview

J. B. Milne, B.Sc. P.Ag.

Foremost

F. S. Goddard, B.Sc., P. Ag.

Fort Vermilion

M. Radakewich, B.Sc.

Grande Prairie

N. G. Miller, B.Sc., P.Ag.

J. S. Hladky, B.Sc., P.Ag. (Ass't.)

A. Protz, B.S.A., B.E., P.Ag., P.Eng.

Regional Extension Engineer

Hanna

D. R. Macpherson, B.Sc., P.Ag.

High Prairie

D.A. to be appointed.

High River

P. Jamieson, B.Sc., P.Ag.

R. Park, B.Sc. (Assistant)

Lac La Biche

A. J. Wiebe, B.S.A.

Lacombe

W. L. McNary, B.Sc., P.Ag.

S. R. Church, B.Sc., P.Ag. (Ass't.)

Lamont

G. W. Shewchuk, B.Sc., P.Ag.

Leduc

G. R. Gylander, B.Sc., P.Ag.

D. L. Simpson, B.S.A. (Assistant)

Lethbridge

H. M. Douglas, B.Sc., P.Ag.

L. K. Bond, B.Sc., M.Sc., P.Ag.
(Associate)D. E. Darby, B.E., P.Ag., P.Eng.
Regional Extension Engineer**Medicine Hat**

J. L. Anderson, B.Sc., P.Ag.

J. M. Bolstad, B.Sc., (Associate)

Morinville

S. C. Powers, B.Sc.

Olds

L. J. Welsh, B.Sc., P.Ag.

Ponoka

C. C. Robinson, B.Sc., P.Ag.

Home Economist

Miss P. Peters, B.Sc.

Mrs. M. Jubenvill, B.Sc.

Miss I. Semeniuk, B.Sc.

Mrs. M. Cox, B.Sc.

Mrs. M. Sharp, B.H.Ec.,

Miss E. Bartman, B.Sc.,

Miss C. Shunter, B.H.E.

Miss M. Oke, B.Sc.

Mrs. E. Clarke, B.Sc.

Office and Agriculturist**Red Deer**

R. D. Price, B.Sc., P.Ag.
 W. Hooze, B.S.A. (Associate)
 R. S. Forrest, B.E., P.Eng.
 Regional Extension Engineer

Rocky Mountain House

G. A. Ross, B.Sc., P.Ag.

Ryley

F. X. Kehoe, B.Sc.

Sangudo

A. J. Charnetski, B.Sc., P.Ag.

Sedgewick

A. E. Edwards, B.Sc., P.Ag.

Smoky Lake

D. J. Christiansen, B.Sc.

Spirit River

F. Graves, B.Sc., M.Sc., P.Ag.

St. Paul

D. E. Berdine, B.Sc., P.Ag.
 D.H.E. to be appointed.

Stettler

E. W. Walker, B.Sc., P.Ag.

Stony Plain

E. C. Lowe, B.Sc.,
 T. T. Newcombe, B.Sc. (Assistant)

Strathmore

K. H. Walker, B.Sc., M.Sc., P.Ag.

Taber

J. G. Calpas, B.Sc., P.Ag.
 M. Kuryvial, B.Sc., M.Sc., P.Ag.
 (Associate)

Thorhild

F. Strashok, B.Sc.

Three Hills

D. I. Peters, B.Sc., P.Ag.

Two Hills

W. J. Dent, B.Sc., P.Ag.

Vegreville

N. A. Chomik, B.Sc., P.Ag.

Vermilion

J. S. Duncan, B.Sc., P.Ag.
 W. L. Cody, B.S.A. (Associate)
 R. Constable, B.Sc.
 Regional Extension Engineer

Vulcan

B. R. Shaw, B.Sc.

Wainwright

N. O. Wohlberg, B.S.A.

Westlock

W. A. Ross, B.Sc., P.Ag.

Wetaskiwin

W. C. Proctor, B.Sc., M.Ac., P.Ag.

Home Economist

Miss D. Chisholm, B.Sc.

Mrs. H. Moore, B.H.Ec.

Miss I. Bradley, B.Sc.

Mrs. E. Durie, B.Sc.

Miss F. Cullen, B.Sc.

Miss M. Blades, B.Sc.

Mrs. B. McCutcheon, B.Ed.

Miss D. Kureluk, B.Sc.

PROMOTIONS AND TRANSFERS

A. W. Beattie	—District Agriculturist II to District Agriculturist III, Calgary.
J. M. Bolstad	—Assistant District Agriculturist Athabasca, to Associate District Agriculturist, Medicine Hat.
D. J. Christiansen	—Assistant District Agriculturist Edmonton (South), to District Agriculturist Smoky Lake.
H. M. Douglas	—District Agriculturist II to District Agriculturist III, Vermilion, to District Agriculturist III, Lethbridge.
J. S. Duncan	—District Agriculturist II to District Agriculturist III, Wainwright, to District Agriculturist III, Vermilion.
H. J. Fulcher	—District Agriculturist II to District Agriculturist III, Edmonton (South).
L. Gareau	—District Agriculturist II to District Agriculturist III, Bonnyville, to Rural Resource Coordinator C.D. 12.
F. S. Goddard	—Supervisor, Plant Industry Division to District Agriculturist, Foremost.
G. L. Godel	—District Agriculturist II to District Agriculturist III, Athabasca, to Acting Supervisor of D.A.'s, Edmonton.
J. R. Gylander	—District Agriculturist II to District Agriculturist III, Leduc.
P. Jamieson	—District Agriculturist II to District Agriculturist III, Calgary, to District Agriculturist III, High River.
F. X. Kehoe	—Assistant District Agriculturist Camrose, to District Agriculturist, Ryley.
W. L. McNary	—District Agriculturist II to District Agriculturist III, Lacombe.
D. I. Peters	—District Agriculturist Mayerthorpe to District Agriculturist, Three Hills.
R. D. Price	—District Agriculturist II to District Agriculturist III, Red Deer.
C. J. Roth	—District Agriculturist Vulcan to Regional Economist, Calgary.
B. R. Shaw	—Assistant District Agriculturist Leduc, to District Agriculturist, Vulcan.
E. L. Treffry	—Associate D.A., Taber, to Writer, Radio and Information, Edmonton.
R. M. Trimmer	—District Agriculturist II to District Agriculturist III, Lethbridge, to Regional Specialist, Plant Industry Division, Lethbridge.
L. D. Williams	—District Agriculturist II to District Agriculturist III, Camrose.
G. W. Law	—Assistant Extension Engineer, Edmonton, to Regional Extension Engineer, Calgary.
R. Constable	—Assistant Extension Engineer, Edmonton to Regional Extension Engineer, Vermilion.
Miss J. Murta	—District Home Economist, St. Paul, to Department of Youth.
Miss L. Sorensen	—District Home Economist at large, to District Home Economist, Berwyn.
Miss E. Zawadiuk	—District Home Economist, St. Paul, to Assistant Resource Coordinator, St. Paul.

APPOINTMENTS

R. Winchell	—Assistant District Agriculturist, Athabasca
R. Berkan	—Assistant District Agriculturist, Camrose.
F. H. Shulz	—Assistant District Agriculturist, Edmonton (South)
J. S. Hladky	—Assistant District Agriculturist, Grande Prairie
R. Park	—Assistant District Agriculturist, High River
S. R. Church	—Assistant District Agriculturist, Lacombe
D. L. Simpson	—Assistant District Agriculturist, Leduc

L. K. Bond	—Assistant District Agriculturist, Lethbridge
T. T. Newcombe	—Assistant District Agriculturist, Stony Plain
M. S. Kuryvial	—Temporary District Agriculturist, Taber
A. J. Charnetski	—Temporary District Agriculturist, Sangudo
Jack Art	—Research Information Editor, Radio and Information Section
B. S. West	—Assistant Extension Engineer, Edmonton
Miss I. Bradley	—District Home Economist, Two Hills
Miss F. Cullen	—District Home Economist, Vulcan
Miss J. Friederich	—District Home Economist, Athabasca
Miss D. Kureluk	—District Home Economist, Wetaskiwin
Miss J. Murta	—District Home Economist, St. Paul
Miss P. Peters	—District Home Economist, Claresholm
Miss C. Shunter	—District Home Economist, Medicine Hat
Miss D. Strynadka	—Food and Nutrition Specialist, Edmonton

RESIGNATIONS

L. A. Blair	—District Agriculturist, High Prairie
R. A. Skaien	—Associate District Agriculturist, Medicine Hat
Mrs. J. Kolisniak	—District Home Economist, Two Hills
Miss S. Myers	—District Home Economist, Wetaskiwin
Miss G. Pike	—District Home Economist at large
Mrs. M. Sharp	—District Home Economist, Lacombe
Mrs. P. Yorgason	—District Home Economist, Claresholm

RETIREMENT

C. E. Yauch	—District Agriculturist, High River
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PART-TIME ASSISTANTS

S. G. Bristow	—Summer Assistant District Agriculturist, Bonnyville
R. D. Cameron	—Summer Assistant District Agriculturist, Grande Prairie
D. G. Dowswell	—Summer Assistant District Agriculturist, Spirit River
G. M. Gillund	—Summer Assistant District Agriculturist, Wetaskiwin
D. E. Knievel	—Summer Assistant District Agriculturist, Two Hills
D. G. Szafron	—Summer Assistant District Agriculturist, Drumheller
B. H. Wiens	—Summer Assistant District Agriculturist, Cardston
D. Felsted	—Summer Assistant Extension Engineer, Grande Prairie
R. V. Archibald	—Instructor, Rural Welding Clinic
J. L. Marr	—Instructor, Rural Welding Clinic
S. Edwards	—Instructor, Rural Welding Clinic
C. McIvor	—Instructor, Tractor Maintenance School
W. Ganske	—Instructor, Tractor Maintenance School
Miss D. Chruszcz	—Summer Assistant District Home Economist, Grande Prairie
Miss K. Day	—Summer Assistant District Home Economist, Edmonton
Miss L. McKinlay	—Summer Assistant District Home Economist, Calgary

NEW OFFICES OPENED

Fort Vermilion	—Changed from temporary to permanent office
Evansburg	—Changed from temporary to permanent office
Foremost	—District Agriculturist office
Three Hills	—District Agriculturist office

OFFICE RELOCATION

—Sangudo from Mayerthorpe

LEAVE OF ABSENCE

Mrs. D. Bagdan —Home Design Specialist, Edmonton

PROFESSIONAL IMPROVEMENT LEAVE

L. W. Rasmusson —Supervisor, District Agriculturists, Edmonton
Warren Wismer —Supervisor, Radio and Information Section, Edmonton
F. Graves —District Agriculturist, Spirit River
J. G. Calpas —District Agriculturist, Taber
H. M. Douglas —District Agriculturist, Lethbridge

GENERAL

Reorganization of the Department of Agriculture involved major changes in the Extension Branch:

- The amalgamation of the Extension Branch and the Agricultural and Vocational Colleges Branch into the Extension and Colleges Division.
- The transfer of the administration of 4-H Clubs from the Extension Branch to the new Department of Youth effective September 1, 1966. The full transfer of the 4-H responsibility, particularly the operation and administration of 4-H Clubs at the district level, will not be consummated until April, 1968.
- The division of the province into seven regions with a regional centre designated for each to help decentralize the services of the Department.
- The approval of the appointment of a Regional Agriculturist for each region to coordinate the Departments Extension and Administrative functions within each region.
- The appointment of Regional Specialists in each region as the need became evident and within budget allowance.

Effectiveness of the work of the Extension Branch in 1966 was augmented by:

In-service Training program emphasizing Leadership Training and Development.

Increased number and effectiveness of Agricultural Advisory Committees at the County Level. This development was accelerated by the revised Agricultural Service Board Act.

Approval of the appointment of an Extension Sub-committee under the Alberta Agricultural Coordinating Committee.

The designation of C.D. #12 as a second ARDA pilot area, and the appointment of a Rural Resource Coordinator and Assistant for that area.

Coordinating meetings with all Extension and Research Station personnel continued to improve our communication with research workers and to improve our extension service to farm families.

The Social and Economic Development Conference at Banff opened the way to planning social and economic development of any region requiring improvement in these two important areas.

DISTRICT AGRICULTURIST SECTION

Plans for regionalization progressed considerably during the year, and for the first time, the Annual Report for the District Agriculturist section was compiled on a regional basis. To conserve space, however, only the provincial totals have been included in this report. Significant program differences between regions were evident in such areas as forage programs, where over four-fifths of the participation took place in the west central, north-west and north-east regions, soil sampling, with almost two thirds of the samples received from the south-west, north-west and north-east areas, and tree planting with almost half the trees being ordered for the southern and west-central regions. Regional variations in livestock programs was less significant.

The increase in regional specialists during the year assisted in program development. Regional program coordination, which functioned smoothly, with the cooperation of all Divisions, has significantly increased the efficiency of specialist help, both regional and provincial, in servicing the program requirements.

The total number of events conducted, and persons assisted, changed little from the previous year, but all regions report the demand for subject matter to be dealt with in greater depth and detail.

Analysis results of the Farm Business Association program were discussed with the farmers by Extension personnel and Farm Management Specialists, before spring work was underway.

Extension programs for improvement in field crops and livestock, involving economics, engineering, soil and feed testing, and veterinary services, continued to be of major importance. During the year, the Youth Ministry was formed, and 4-H was transferred to that, but the programs continued with virtually no change.

The compilation of provincial activities in the various program areas follows:

Field Crops

1. Crop Improvement (grain, forage and special crops)	
Farmers participating	1,831
Meetings, demonstrations, field days, courses, tours	546
Attendance	14,385
Seed Cleaning Plants assisted	62
Seed drill samples submitted	507
Persons otherwise assisted	14,795
2. Soil Conservation	
Special projects	183
Farmers participating	672
Demonstrations	267
Meetings	133
Attendance	4,332
Soil Samples submitted for analysis	7,296
Persons otherwise assisted	7,393
3. Weed Control	
Special projects	223
Farmers participating	1,286
Demonstrations	244
Meetings	105

Attendance	3,713
Weed specimens identified	1,334
Persons otherwise assisted	5,247
4. Crop Pests and Diseases	
Meetings	37
Attendance	1,225
Specimens identified	1,270
Persons otherwise assisted	2,990
5. Animal Pest Control	
Farmers participating in coyote control	2,523
Farmers influenced in control of livestock pests	2,351
Meetings	25
Attendance	882
Specimens identified	117
Persons otherwise assisted	1,370
6. Agricultural Committees and Service Boards	
Meetings attended	469
Tours, field days, etc.	67
Attendance	1,633
Persons otherwise assisted	2,114
7. Horticulture	
Meetings	137
Attendance	1,794
Farmstead plans assisted	791
Shelterbelt plans assisted	2,606
Demonstrations and small orchards	332
Trees ordered through D.A. offices	2,091,421
Persons otherwise assisted	8,257
8. Beekeeping	
Meetings	7
Attendance	330
Persons otherwise assisted	310

Livestock

Extension program aimed at improved livestock programs and efficiency.

1. Livestock Improvement

Meetings	223
Attendance	8,594
Herds and flocks culled or selected	239
Feed samples submitted for analysis	1,304
Farmers assisted with pedigree registration	765
Farmers assisted with R.O.P.	438
Farmers using Departmental dehorners	927
Farmers using Departmental tattoo equipment	401
Livestock placements:	
Horses	91
Cattle	1,756
Sheep	1,659
Swine	1,058
Special projects	417
Farmers participating	2,070

2. Livestock Marketing

Purebred livestock sales assisted	49
Commercial livestock sales assisted	44
Persons otherwise assisted	2,015

3. Veterinary and Livestock Disease Control

Specimens submitted or recommended for diagnosis	369
Enquiries re health or disease problems	1,998
Recommendations re improved nutrition	977
Recommendations re improved husbandry management	1,251
Meetings, short courses, etc.	51
Attendance	1,847
Persons otherwise assisted	2,279

Poultry

Extension work in the field tends to be very specialized, and most of the program is carried out by the poultry specialists and fieldmen. The District Agriculturist staff only organized 9 meetings, with attendance of 239, and assisted 484 other persons in some way with poultry problems.

Dairying

Special projects	16
Farmers participating	115
Meetings, demonstrations, tours, etc. organized	40
Attendance	1,571
Farmers assisted with cow testing	252
Herds culled or selected	40
Contacts with dairy processors or frozen food lockers	132
Persons otherwise assisted	1,320

Junior Activities

4-H Agricultural clubs organized and supervised	393
Members enrolled	6,090
4-H functions attended by District Agriculturists	1,482
Attendance	74,463
Farm and Home visits re 4-H	2,511
Talks and demonstrations given by D.A.'s	940
Other Junior activities assisted	150
Attendance	7,787
Persons otherwise assisted	7,200

Agricultural Economics

This program has increased in size, and its effectiveness was markedly improved during 1966 by the use of the computer in analysis, which allowed consideration of alternatives before the next cropping season.

In this area of work particularly, involvement is in much more depth and detail than previously. The location of regional Farm Management Specialists has assisted greatly in this program.

AGRICULTURAL ECONOMICS TOPICS	INDIVIDUAL CONTACT		SMALL GROUPS			MASS	
	Farm Visits	Office Visits	No. of Groups	No. of Meetings	Attendance	Meetings	Attendance
Farm records and Accounting	456	1,891	61	169	2,490	13	678
Farm Business Analysis	488	1,005	50	110	1,248	10	224
Budgeting	123	554	24	28	469	2	83
Marketing and Price Outlook	183	601	3	4	88	11	758
Farm Lease and Rental							
Agreement	142	542	13	13	266	6	405
Farm Credit	191	794	7	6	133	8	444
Income Tax and Estate							
Planning	89	473	7	5	157	30	1,626
Economic Principles	169	349	23	25	438	21	1,044
TOTAL	1,760	6,291	116	390	6,121	106	5,284
(may be less than the sum)							

Families participating in Groups	834
Total families worked with (Individually and in groups)	2,323

Agricultural Engineering

The Agricultural Engineering section has more regional specialists than any other Division, and this has made their service much more available, which increased the demand in this area of work.

AGRICULTURAL ENGINEERING TOPICS	INDIVIDUAL CONTACTS		SMALL GROUPS		SCHOOLS		MASS	
	Farm	Office	Meetings	Attendance	No.	Attendance	Meetings	Attendance
Buildings	1,004	3,321	2	31	15	501	24	1,051
Water and Sewerage	695	2,323	—	—	6	261	19	1,176
Drainage and Irrigation	361	936	8	88	—	—	14	1,123
Farmstead Mechanization	253	895	—	—	11	308	19	2,987
Machinery	236	959	4	71	15	296	9	427
TOTAL	2,542	8,372	14	190	47	1,344	66	4,202
(not necessarily the sum)								

Agricultural Societies

Activities carried out under auspices of the Agricultural Societies included 36 Fairs, 51 Livestock Shows or Sales, 17 Seed Fairs, 37 Horticultural Shows, 26 Farm and Home programs, 99 Rallies, tours, shows, etc. with 4-H, 288 meetings and 464 other events.

Publicity

Newspapers	1,392	D.A. columns or equivalent in 91 newspapers.	
Newsletters	313	Newsletters were written, with total mailing 36,631	
Radio	554	Talks	796 other releases
Television	165	Presentations	288 other releases

Other Activities

Advisory Committee Meetings	100
ARDA Meetings	84
Special projects	53
Other Agricultural Meetings organized (not listed elsewhere)	227
Other Organizations assisted	234
Attendance	1,437
Attendance	2,533
Total persons assisted	3,306
Attendance	6,512
Meetings	401
Attendance	15,178
Persons otherwise assisted	4,641

Staff Training and Professional Improvement

During the year, one-half of the field staff attended a one week Leadership course at Penhold. All of the staff attended an Emergency Measures Organization course of one week for employees who had not previously had Civil Defence training, and three days for updating those who had received training several years ago.

In May, a four-day conference at Banff on 'Human Resource Development' was attended by District Agriculturists. In September, another four-day conference on 'Stimulants to Economic De-

velopment' was attended by twelve of the senior district agriculturists. Immediately prior to this conference, 14 of the district agriculturists attended a one-day seminar on Extension with Mr. L. Watts, Director of Extension for Colorado, and Dr. Dildine and Dr. Shulman from the Sociology Department at Fort Collins.

Eight district agriculturists participated in the Leadership Training sessions for the Rural Sociology and Rural Economics Study Session.

Four district agriculturists attended three week courses in Extension, two at Fort Collins, Colorado, and two at Tucson, Arizona.

HOME ECONOMICS SECTION

Home Economics Extension during the early years met the pressing problems of providing goods and services for the family. A marked awareness of the need to change the image of the role of the home economist has developed. More recent study of this profession's goals would define home economics as the field of knowledge and service primarily concerned with strengthening family life through:

- Educating the individual for family living.
- Improving the services and goods used by families.
- Conducting study and research to discover the changing needs of individuals and families and the means of satisfying these needs.
- Furthering community, national and world conditions favorable to family living.

Home Economists have taken steps to broaden their programs to assist family members understand and meet their changing roles in today's society. Provision of goods, services, and experiences required by families to increase their well-being has become largely the responsibility of social groups or systems. The family is required to work with the agencies and organizations in and beyond the community which provide for their needs and contribute toward the development of their members.

- Home economists helped people use the total resources of the family and the community to improve their living standards.
- Home economists were concerned with the family as consumers and in helping them make wise decisions in spending their available income.
- Home economists designed programs for both middle and low income families.

Food and Nutrition

	No.	Attendance
Demonstrations	30	2,592
Lectures	72	
School Lunch Programs (assisted and organized)	9	
Home Visits	106	
Otherwise assisted	4,784	

Additional lectures and demonstrations were given at meetings of thirty-two 4-H food and garden clubs.

Additional lectures and demonstrations were given at meetings of thirty-two 4-H food and garden clubs.

With an increase of approximately 10 per cent in the price of food, homemakers became very concerned. In some areas, supermarkets were boycotted. The federal government set up a commission to investigate food prices. Yet despite housewives' increased concern about high food prices, they tended to buy higher priced convenience foods rather than economy foods. This has resulted in many economy foods disappearing from the market. The trend emphasized the need that the homemaker be informed about what makes food prices. Home economists have provided an unbiased, informative service, helping the homemaker buy more wisely.

The complexity of our market with many products, with deceptive packaging, fractional sizes and misleading labels and bonuses, has made necessary a well-informed housewife.

Topics on this subject include:

Your Food Dollar	Food Preservation
Food Shopping That Makes Cents	Weight Control
Eat Well on a Low Income	New Food Products
Emergency Feeding	Allergy Diets
Freezing	Food Preparation

A new project was started this winter — "Food Catering for Community Groups". The short course held met with great approval, and it is planned to hold similar courses throughout the province within the new year. This was just a step towards a major plan to adopt such a short course for small commercial food institutions within rural Alberta.

A food and nutrition specialist was appointed late this year to meet the ever increasing demand for specialized up-to-date information on general and therapeutic nutrition, on food preparation and preservation, and on consumer problems related to food.

Clothing and Sewing

	No.	Attendance
Sewing Clinics (3 days or more)	40	1,653
Sewing Clinics (1 day only)	6	93
Clothing Construction Course		
— Part A	69	988
— Part B	89	2,559
— Part C	51	1,234
Lectures and Demonstrations	240	4,482
Individuals Assisted	2,811	
Home Visits	245	

Continued demand for instruction in sewing techniques indicates that this is the greatest need of the rural homemaker in the clothing field. The majority of persons requesting instruction are beginners who are learning to sew and are given the clothing construction course. There is an increased demand for advanced instruction. Over 62 per cent of the individuals taught at sewing clinics in 1966 were rated as intermediate and ad-

vanced in ability. Rising clothing costs could be considered a factor in creating awareness in this area.

Individual and group requests for assistance regarding new textile developments and fabric information reflect this as an urgent problem.

Many questions were received pertaining to laundry and stain removal problems. The number of individuals assisted in the entire field of clothing and sewing shows an increase of 42 per cent over 1965.

Handicraft

	No.	Attendance
Lectures and Demonstrations	117	3,765
Individuals Assisted	881	

A one-day work shop was held for exhibitors to improve standards of exhibits. Emphasis is placed on good design and the production of worthwhile articles. Interest and appreciation of counted thread embroidery continues to increase. Staff members were called upon to judge at fairs and conventions and to present comments on standards.

Although programs in handicraft were not stressed, lectures and demonstrations showed an increase of 17 per cent in 1966. Assistance was given to 150 more individuals than in 1965.

Home Design

	No.	Attendance
Lectures and Demonstrations:		
Housing	56	
Decorating	76	
		3,213
Homes Planned:		
Complete	207	
Partial	145	
Building and Finishing Materials	280	
Storage Areas	152	
Homes Remodelled:		
Complete	79	
Partial	252	
Utility, Kitchen and Bathroom	270	
Persons Assisted (color, house plans and home furnishings)	2,198	
Home Visits (home planning, Decorating and remodelling)	851	
Schools (building and remodelling, home design, plumbing)	14	634

Individual requests for assistance with plans for new homes and particularly remodelled homes has shown a marked increase.

One home design specialist spent considerable time working on the plans for the Agriculture Building and the Consolidated Laboratory. Extensive assistance was given by the regional home design specialist for furniture selection and interior finish-

ing materials for the Kinsmen Camp Horizon at Bragg Creek and the Nursing Home at Drumheller.

Progressive Farming Days held last February included a section for the homemaker. In conjunction with the displays, films, slides and lectures were presented. Because of the response from the show at Old's, an expanded ladies' program will be presented this coming year in Vermilion.

The section on housing on the television program "This Business of Farming" was viewed in January. Thirty-seven requests for assistance with house planning came as a direct result of this show. Numerous requests from Saskatchewan and Manitoba were referred back to their own extension services.

The number of office interviews has risen sharply. This is partly due to having a regional home design specialist in a major trading centre. Many people come to the cities to purchase their building materials and furnishings and incorporate an office interview the same day. A series of interviews at the district offices arranged by field staff have reduced travelling costs and time, allowing the specialists to assist more people in one day.

Home Management

	No.	Attendance
Lectures and demonstrations	328	3,945
Home Visits	61	
Home Management Groups	8	
Home Management group meetings	19	465
Farm and Home Program (groups)	28	1,263
Home Visits (Farm and Home)	60	
Accounting Groups	11	461
Persons otherwise assisted	3,473	

With the increase in living costs in almost every category of family spending, information pertaining to home accounts, budgeting, food costs and general buymanship were very much in demand this year. Even with other sources available to homemakers, individual urban requests have been increasing to a large extent, especially in the area of purchasing and upkeeping of large and small household appliances.

The number of lectures presented by the staff on different aspects of home management increased by 68 over 1966. Topics included "Credit Buying", "Steps to Security", "Are you an Informed Wife", "Waste not Want Not", "Eat Well on a Low Income", "Buymanship of Large Appliances", etc.

Several home economists have conducted home accounting workshops which will develop into a series in Home Management.

The Home Management Specialist and one district home economist attended a conference on Consumer Credit in Saskatoon (the first held in Canada) to study the many facets of consumer credit. A comprehensive report was prepared and distributed to the staff for reference purposes.

Six home economists assisted in conducting a survey on rural plumbing conditions in various parts of Alberta. A brief

entitled "Improvement of Rural Housing in Alberta" was prepared and submitted for the consideration of the Minister and the Cabinet.

4-H Girls' Clubs

District home economists organized and supervised 4-H girls' club work in their districts, and co-operated with the district agriculturists in Multiple 4-H Club programs. They organized and conducted various functions such as achievement days, rallies, camps, judging and public speaking competitions with some assistance from summer staff. Some district home economists report that the increased number of 4-H activities require more time spent in the office for exchange programs, visiting and outgoing delegations, recommendations for scholarships, references for 4-H members, etc.

No. of 4-H Homemaking Clubs	205
No. of Lectures and Demonstrations	687
4-H Functions attended	852
Junior Activities other than 4-H assisted	71
Total Attendance	42,172
Home Visits re 4-H and other Junior Work	411
4-H Councils	30
4-H Council Meetings	55
Total Attendance	1,084

Other Activities

District home economists co-operated with many other departments, organizations and agencies. Some of these were: Departments of Welfare, Health, Indian Affairs, Cultural Activities and Recreation, Womens' Bureau and Centennial Program Division; Chambers of Commerce, Agricultural Societies, County Councils, Exhibition Associations, Local and Provincial Civil Defence, Farm Safety Association, Family Service Bureau, Old-age Pensioners' Association, Provincial and Local Organizations of W.I.'s, W.A.'s, F.W.U.A.'s, C.A.C., C.G.I.T., Scouts, Girl Guides, F.U. & C.D.A., Provincial Breed Associations, Agricultural Producer Associations, Horticulture Societies, Seed Cleaners, Radio & TV stations, Y.W.C.A., White Cross, Kiwanis, Lionettes & Optimists. There were 139 meetings attended by 3,475 persons at which addresses were given or assistance and information provided at planning meetings.

The Department of Welfare was again provided with revised Scales of Allowances for food and clothing for use throughout the province. Also 24 meetings re Welfare were attended, 97 welfare families required 43 home visits and 121 individuals otherwise assisted at the request of welfare.

Fourteen district home economists worked jointly with the district agriculturists in establishing or meeting with Advisory Extension or County Councils and attended 29 meetings. In addition, 17 meetings were held with 8 F.U. & C.D.A. Groups and three Home Economics Advisory Committees.

District home economists co-operated with district agriculturists, or worked separately in organizing and addressing 103 Short Courses attended by 6,158 persons. There were 40 field days and tours held for 1,044 persons, and 101 meetings (874 present) to plan district events.

At 69 meetings attended by 3,493 persons, topics dealt with were:

Happy Family Living	So You're Giving A Speech
Harmony in Your Home	Horizons of Health
Where to Find Out	Looking Our Best
Youth, Guidance & Careers	Decision Making
Social Changes & the Family	The Farm Woman's Role in Management
Law and the Modern Woman	The Farm Woman's Role in Management
The Working Mother	The Home Executive
More Successful Meetings	

Individuals assisted re above topics — 788

Various phases of horticulture were dealt with at 19 meetings, 12 short courses, 22 tours attended by 1,335 persons, 30 home visits and 457 persons otherwise assisted.

District home economists arranged 18 exhibits at conventions and special events. District home economists judged at 148 W.I. and F.W.U.A. conferences, fairs, and conventions, and gave 118 lectures on "Standards for Judging". They assisted 48 organizations such as F.W.U.A., W.I., Community Groups and fair boards in revising prize lists and in planning for special events.

Other special functions attended such as banquets, etc. (public relations) numbered 257.

Services of this branch were outlined at 163 meetings attended by 5,714. Agriculture & Vocational College courses were outlined at 30 meetings and information given 2,289 persons.

Information and Publicity

The use of mass media to reach larger numbers with timely information became an important tool for extension home economists. TV presentations have almost doubled which may account for the increased number of office contacts by phone, letter and personal interview. District Home Economists reported the great many individuals who commented on having first become aware of extension by radio and TV.

Three one-minute consumer information radio comments were taped each week for "Call of the Land".

	1965	1966
Newspaper articles written	884	995
Number of newspapers using articles	96	116
Radio Releases	70	108
T.V. Releases	32	25
Radio Talks and Interviews	203	250
T.V. Talks, Demonstrations and Interviews	46	77
Newsletters written	132	157
Total Average Circulation	18,520	17,633
Publications distributed	75,219	96,295

Summary of Activities

Demonstrations, Lectures, Field Days, and short courses	1965	1966
Fairs and Conventions	2,640	3,117
Total Attendance	107	148
Letters requesting information	94,631	109,197
Home Visits	17,068	17,692
4-H Girls' Clubs	2,170	2,162
Office Interviews	185	205
Phone calls for information	6,548	7,154
	15,002	18,857

RADIO AND INFORMATION SECTION

General

1966 was a year of expansion for the Radio & Information Section. The addition of Jack Art as Research Information Editor and Ellis Treffry as a permanent Agricultural Weather Forecaster permitted an extension of services provided to the agricultural industry.

In addition to the regular weekday farm broadcast "Call of the Land", press releases and the farm weather forecast, a permanent agricultural film and slide library was established. The purpose of this service was to provide extension personnel with a source of visual material for presentations and to record agricultural development in Alberta. Members of the staff in co-operation with the Film and Photographic Branch of the Department of Industry and Development produced several feature films and television news clips. These were well received by commercial television stations, farm directors and extension personnel.

The Radio and Information Section assisted with editing and general publicity work, including the centennial edition of the Alberta Farm Guide. Radio & Information personnel also participated in a television workshop, speaking engagements and in the organization of local radio and television programs.

Supervisor Warren Wismer took educational leave in August to obtain a masters degree in extension journalism.

Radio Production

During 1966, "Call of the Land" the Alberta Department of Agriculture's ten minute, Monday to Friday, farm broadcast was aired 260 times on Alberta radio stations. The following stations carried the broadcast throughout the year:

CKUA Edmonton	CKSA Lloydminster
CFGP Grande Prairie	CJDV Drumheller
CFCW Camrose	CJOC Lethbridge
CKRD Red Deer	CHAT Medicine Hat
CKYL Peace River	

At the request of radio station CJDC Dawson Creek, arrangements were completed to air "Call of the Land" on that station in the coming year. This station has considerable Alberta coverage.

"Call of the Land" was used primarily to publicize the services of the Extension & Colleges Division of the Alberta Department of Agriculture. Current information was also provided on federal and provincial farm policy and good farm management practices. Extensive use was made of personality interviews to provide closer association between research and extension personnel and the agricultural producers of the province.

Evaluation

The Bureau of Broadcast Measurements Survey provides an assessment of the program. Semi-annual reports indicate that approximately 70,000 households listened to the broadcast once or more a week. The program was carried in the choice noon-time period on all stations.

Programming

Efforts were made to provide coverage of all segments of the agricultural industry. The majority of the material originated within the Alberta Department of Agriculture. The following table indicates the nature and frequency of the material used:

	No. of Programs
Personality interview	333
On-the-spot-reports	37
Miscellaneous Information	393
Editorials by Commentators and Guests	152
Musical — Christmas	1
Extension Information	186
	<hr/> 1,002

Sources of personality appearances are indicated in the following table:

Alberta Department of Agriculture	151
Other Alberta Government Departments	4
Canada Department of Agriculture	65
University of Alberta	40
Farm people, including 4-H	36
Other	37
	<hr/> 333

A total of 1,002 items were used on the 260 programs. The following table provides a breakdown of the material and the number of separate topics dealt with during the year.

Miscellaneous topics and information	276
General Agriculture, including world and national items	48
Livestock	190
Farm Safety	3
Farm Management and Economics	85
Field Crops, Soils and water	183
4-H	17
Poultry	8
Dairy	24
Veterinary Science	15
Horticulture	56
Agricultural Engineering	20
Agricultural Pest Control	18
Schools of Agriculture	5
Fur Farming	3
Home Economics and Extension	44
(consumer information)	
Apiculture	7
	<hr/> 1,002

The majority of the program was directed to the farm operator, however many of the programs carried information of interest and value to the housewife, as well as the family gardener. Promotional time was provided for events sponsored by the Alberta Department of Agriculture and other agricultural organizations. Extension courses in agriculture were widely publicized.

A cross section of events covered and material sources included: Annual conventions and meetings of the Western Stock Growers, Western Hog Growers, Dairymen's Association, Breed Association meetings, Exhibition Boards, Irrigation meetings. Direct reports were also obtained from: Federated Co-op Fertilizer Plants, Progressive Farming Days, Alberta Wheat Pool, Alberta Research Council, Livestock shows and sales, Chamber of Commerce Agricultural tours, Walsh Cattle Association, University of Alberta Feeders Day, Kinsella Field Day, Brooks Horticultural field days, P.R.I.M.E. tour, ARDA Symposium on Rural Development, Canada Department of Agriculture Research Stations and Agricultural and Vocational Colleges.

For the ninth consecutive year, interviews and reports from the Toronto Royal Winter Fair were released directly through the Alberta Government telephones network to the nine participating stations. In addition, night press reports were provided for Alberta Dailies.

"Call of the Land" was produced, recorded and distributed from the studios of the radio and information section. A total of 4,329 "Call of the Land" broadcasts had been released as of December 31, 1966.

Television

The Alberta Department of Agriculture co-operated with the other prairie provinces, the three prairie universities and the C.B.C. to produce the television short course "This Business of Farming" for viewing in January, 1967. The theme of this four-day series on modern farming was "Meeting the Challenge". Alberta agrologists participated in the first program "Technical and Vocational Training" which reviewed opportunities for rural people, vocational education, incentives for technical training and careers in agri-business. Arrangements were completed for three local follow-up programs in Medicine Hat, Red Deer, and Lloydminster. Other topics prepared for the 1967 telecourse were "The Importance of Soil Management", and two, one-hour programs on "Marketing Methods for Farm Products".

In co-operation with the Film and Photographic Branch of the Department of Industry and Development, the Radio and Information Section provided the province's eight television stations with 1,400 feet of film coverage on Alberta's achievements at the Royal Agricultural Winter Fair. Television news clips also produced on such subjects as "The Prairie Rivers Management and Evaluation Program". "The Impact of the 1966 Grain Harvest on the Provincial and National Economics", "The Centennial Tree Planting Program", and "Alberta's Mink and Turkey Industries".

The section also made several short film items on technical agriculture for use by district agriculturists on TV programs and by television farm directors.

Farm Notes

Approximately 300 agricultural and home economics articles were released in "Farm Notes".

Collected from Department of Agriculture and home management specialists, the information was sent out on a weekly basis to a mailing list of over 2,000 names, representing radio, press, commercial companies, government institutions, and libraries in many parts of the world.

Pictures were included with some of the articles. They proved popular with the farm press, and a considerable number of requests were received for glossy prints and mats. A number of articles, depicting the role of the Department of Agriculture in the "Food Chain" were also published for the first time in "Farm Notes".

There was a sharp increase in the number of names added to the mailing list during the past year. Many of these requests came from commercial companies. Those already receiving "Farm Notes" were very prompt in reporting changes of address. Several Departmental officials have reported very complimentary remarks on radio and information publications from both Eastern Canada and the U.S.A.

Science and the Land

Fifty-two reports on agricultural research projects were released to the press and a list of agrologists and agri-businessmen in 1966. These subjects were gathered during regular visits to the federal research stations at Lethbridge, Beaverlodge and Lacombe and to the Faculty of Agriculture, University of Alberta, Edmonton.

News Releases

There was an increasing demand for news release services provided by the Radio and Information section in 1966. This resulted in the editing and distribution of approximately 80 special releases. Glossy prints and reproduction mats were also provided to publications when pictorial material was required. These were widely used by dailies and the farm press.

Agricultural Weather Forecasts

This was the sixth season of the Agricultural Weather Forecast, a joint project of the Alberta Department of Agriculture and the Dominion Public Weather office, located at the Edmonton International Airport.

The forecast was issued at 10:30 a.m. six days a week, commencing May 9th, 1966, and ending October 31st, 1966. A total of 152 forecasts were issued during this period.

The forecast was composed of two parts. The synopsis consisted of a discussion of past, present and expected future weather conditions. This discussion had an agricultural interpretation and frequently referred to the agricultural operations in different parts of the province and the effect weather changes would have on these operations. The second section consisted of a regional forecast for the present and following day with an outlook for the third day. The regions were the Peace, Parkland and Prairies, each with its own characteristic long term weather pattern.

Results varied little from previous years. About half of the forecasts could be graded as very good and another 25-30 per cent classed as useful. The third day forecast was sufficiently inaccurate in approximately one quarter of the cases to be of little use in planning work three days in advance.

A survey was done of those radio stations receiving the forecast to determine their impressions and suggestions for improvement. Without exception all replies commended the forecast and stated it was one of the more popular agricultural features carried in their areas.

AGRICULTURAL ENGINEERING SECTION

Two additional regional extension engineering offices were established at Calgary, and Vermilion to assist in meeting the ever increasing demand for agricultural engineering information and services. There are now five regional engineering offices located at Lethbridge, Calgary, Red Deer, Vermilion, and Grande Prairie, and a headquarters office at Edmonton.

Increased requests were met for the "production" type of schools which were introduced the previous year. The four-day farmstead machinery exhibit was renamed "Progressive Farming Days" and again was held at the Olds Agricultural and Vocational College. For the first time, a home section was included in the display area. This may have been, in part, responsible for the increase in attendance.

After ten years of operation of the rural welding clinics, the demand for this one-week school continued to be high and all requests were filled. The number of tractor maintenance schools were increased over the previous year to meet the requests from the rural people. As in the past, these clinics and schools were administered by the extension engineers and financed by the Alberta Department of Education and the Canadian Vocational Training.

Interest increased in the water and water well development schools which were introduced in 1964, in co-operation with the Water Resources Division, Research Council of Alberta, and Industry. Nine schools were held throughout the province.

One-day "Concrete on the Farm" schools were conducted in co-operation with the Portland Cement Association and the Agricultural and Vocational Colleges as a new approach to promoting better concrete on the farm.

Generally there was an increase in the number of schools, demonstrations and field days, but there was a marked increase in the number of farm calls and calls to district agriculturist offices. Fifty-four per cent of the farm calls were directly concerned with farm buildings, farmstead planning and mechanization accounted for eighteen per cent. Fourteen per cent of the calls were connected with drainage problems and another fourteen per cent dealt with water and sewerage installations. This pattern varied in different regions, as seventy-five per cent of the farm calls in the Lethbridge region were directly associated with farm buildings and fifty per cent of the calls in the Grande Prairie (Peace) region were connected with drainage. Also in this northern region, it was noted that seventy-three per cent of the work connected with buildings was associated with hog barn construction.

The extension engineers co-operated with a number of other departments and agencies in formulating plans and carrying out various projects and programs. They provided lecturers for the Southern Alberta Institute of Technology, prepared plans for the Plant Industry Division, designed a hog barn for the Olds Agricultural and Vocational College, designed and supervised the installation of the controlled environment ventilating system for the Poultry Branch, co-operated with the Horticultural Station at Brooks on the design of vegetable storages, and assisted farm owned organizations in preliminary designs for bulk storage of fertilizers.

The engineers also worked with P.F.R.A. and the Water Resources Division in promoting and surveying small individual drainage and irrigation projects. The senior extension engineer continued as the Alberta representative on the Canadian Farm Building Plan Service, and chairman of the Beef Catalogue and Plan Revision Committee. The extension engineers served on various other committees throughout the year.

The following tables summarize the Agricultural Engineering activities:

Schools

Farm Buildings (General)	4	150
Home Building and Remodelling	12	285
Sewage and Plumbing	4	87
Electrification	6	78
Tractor Maintenance	11	211
Rural Welding Clinic	15	330
Water and Water Well Development	9	134
Beef Production	9	359
Swine Production	7	325
Dairy Production	3	109
Farmstead Mechanization	7	177
Others	7	179
Progressive Farming Days	1	1,700

Demonstrations and Field Days

Water and Sewerage	3	105
Forage	6	128
Machinery	6	123
Building Tours	10	230
Dairy	5	205
Others	4	125

General

Short Courses	85
Meetings (Included in above)	
Farm Notes	5
Radio Programs	25
Plan produced for publication	7
Plan prepared for individuals	49

Schools

Bulletins and pamphlets prepared for publication	2
Farm Calls	1,304
Surveys	145
Calls to District Agriculturist offices	237

AGRICULTURAL MANPOWER**Alberta Federal-Provincial Manpower Committee (Farm Labour)**

This was the first year's operation working with the new Federal Manpower Department. No important changes were made in the Federal-Provincial Manpower Agreement for 1966.

General

Farmers again were unable to obtain sufficient numbers of skilled farm workers particularly for dairy, swine, beef cattle, specialty crops and irrigation operations. Unskilled labour was available through the Federal Manpower centres to take care of most casual farm labour requirements. As these were usually unskilled, they did not meet the most urgent needs. Keen competition with other industries for labour requirements made it difficult to attract good workers for the farm.

Training of Farm Workers

Some progress was made in training skilled farm workers for particular skills through the Agricultural and Vocational Colleges. Plans were formulated to step-up the training needs with the co-operation of the various divisions of the agricultural industry.

Placement of Farm Workers through district agriculturist offices

Most local recruitment and placing of farm workers was done through the nearest Manpower Centre. They co-operated fully in trying to meet the need for farm workers.

Indian Farm Labour Program for Sugar Beet and Vegetable Industry

The Committee again administered the program of assisting in the recruitment, transportation and placement of Indian workers for the sugar beet and vegetable industry in Southern Alberta. Increased efforts of the Committee in recruitment of workers on the Indian Reserves in Alberta and Saskatchewan brought good results. A marked increase in Indian workers from Alberta was particularly gratifying. More Indians remained on farms for yearly employment. Sufficient numbers of Indians were placed on farms

Fieldmen

Sub-Committee on Housing

Recruitment, Transportation and Placement

Total number of Indian workers employed in Sugar Beet and Vegetable fields (estimated)	3,100
Number of Indian workers transported — Adults	1,808
— Children	539
Number of Sugar Beet Growers using workers	677
Amount earned by Indian workers for sugar beet, vegetable and general farm labour in Southern Alberta (estimated)	\$900,000
Indian workers from Saskatchewan	70 %
Indian workers from Alberta	30 %
(32 workers reported Manitoba as home base).	

AGRICULTURAL SOCIETIES

Annual Meeting

Mr. "Chick" Miller was returned as President, and Mr. Jim Reid as Secretary-Treasurer for 1967. A resolution passed provided for setting of fair dates at time of annual meeting for all fairs participating. The meeting also recommended to the Minister of Agriculture that the Peace River Fair be recognized as a "C" Fair by the province.

Fairs held in 1966:

- "A" Class — Calgary, Edmonton, Lethbridge, Red Deer.
 "B" Class — Camrose, Grande Prairie, Lloydminster, Medicine Hat, Vegreville, Vermilion, Wetaskiwin.
 "C" Class — Athabasca, Battle River, Benalto, Darwell, Donnelly-Falher-Girouxville, Lougheed, Mayerthorpe, Olds, Peace River, Pincher Creek, Priddis-Millarville, Vauxhall, Westlock, Wildwood, Willingdon.

Other Societies:

- Alix, Argyle (Claresholm), Barrhead, Cardston, Central Alberta (Lacombe), Drumheller, East Central Alberta (Coronation), Fairview, Hanna, High Prairie, High River, Lamont, Nanton, Okotoks, Rimbey, Rocky Mountain House, Spirit River, Stettler, St. Paul, Taber, Victoria Trail (Smoky Lake).

Master Farm Family Program

Two families received the award in 1966:

The Lionel M. Bird Family, Carstairs,

The Elmer J. Jensen Family, Standard.

An alternative to the \$1,000 cash award was offered to these families. This was an all expense trip and tour to "Expo '67" and agricultural points of interest in the Province of Quebec.

Alberta Master Farm Family Association

Plans were made for a group tour to Expo '67, and a conducted tour of the Province of Quebec. Families were contacted regarding interest and participation.

NAMES OF HOMES ACT

Number of homes registered in 1966	64
Total registration for the province	649

ALBERTA IRRIGATION PLANNING BOARD

One meeting of the Board was held on December 14th, 1966.

Board Members:

- S. S. Graham, Chairman, Director of Extension and Colleges Division, Edmonton.
 G. Parlby, Secretary, Agricultural Economics Division, Edmonton.
 Earl Bowser, Senior Pedologist, Canada Department of Agriculture, Edmonton.
 T. W. Manning, Head, Agricultural Economics Department, University of Alberta, Edmonton.
 C. J. McAndrews, Director, Program Development Division, Edmonton.
 Sam Blair, Farmer, Picture Butte.

PUBLICATIONS AND VISUAL AIDS SECTION

Considerable improvements were made in handling publications and visual aids during the year. The staff was more than doubled and more adequate facilities provided.

The "Agdex" system of indexing publications, adopted in December of 1965, greatly improved the efficiency of handling

and distribution of publications. This is being integrated with the same indexing at country offices.

General agricultural publications distributed	276,705
Homemaking publications distributed	75,219
Individual building plans	21,412

Duplicating and copying equipment was concentrated in this section for most of the department's requirements. Improved and more efficient equipment was added. A full-time operator was provided.

Visual Aids:

Improved card indexing was adopted for all visual aid equipment. This added to the efficiency of distribution and inventory of this equipment.

Visual Aid Equipment Available for Distribution to Department Personnel

	No.	Orders for equipment filled
Overhead Projectors	4	72
Film Strip and Slide Projectors	14	65
Opaque Projectors	1	4
Movie Projectors	8	85
Loud Hailers	3	13
P.A. Systems	6	27
Screens	13	53
Films owned or on loan in Library		169
Owned by Branch		78
On extending loan		91
Requests for films (supplied)		343

4-H SECTION

The 4-H Section was transferred from the Extension and Colleges Division to the newly created Department of Youth on September 1st, 1966.

District Agriculturists and home economists were responsible for the local organization and administration of all 4-H Clubs. An agreement was reached to have the Department of Youth completely take over the local responsibility for 4-H clubs by April, 1968.

ARDA

The administration of Rural Resource Co-ordinators, Assistants and staff was transferred May 1st, 1966, from the Extension and Colleges Division to the Program Development Division.

District agriculturists, home economists and the extension staff gave special attention to the presently organized Rural Development areas and projects being developed under ARDA.

Report of the Agriculture and Vocational Colleges Branch

1966

S. S. GRAHAM, B.Sc., P.Ag., Director, Extension and Colleges Division

J. E. HAWKER, B.Sc., B.A., P.Ag., Director of Colleges

J. E. BIRDSALL, M.Sc., P.Ag., Principal, Olds College

W. S. BARANYK, B.Sc., B.Ed., P.Ag., Principal, Vermilion College

M. H. JAQUE, B.Sc., M.Ed., P.Ag., Principal, Fairview College

On April 1st, 1966 the Agricultural and Vocational Colleges Branch and the Extension Branch were amalgamated to form the Extension and Colleges Division. This was designed to provide a stronger and more complete integrated agricultural and vocational educational program for rural families of Alberta.

Graduation 1966

For the 1965-66 term, students were graduated from the Olds College on June 24th, from Vermilion on June 30th, and from Fairview June 17th, 1966. On these dates Diplomas of Graduation or Certificates, shown in brackets, were presented as follows:

	Olds	Vermilion	Fairview	Total
Agriculture	58	51	23	132
Artificial Insemination	N/O ¹	5(5) ²	N/O ¹	5(5) ²
Clothing and Design	16	N/O ¹	N/O ¹	16
Commercial	33(26) ²	32(32) ²	16(11) ²	81(69) ²
Home Economics	N/O ¹	7	N/O ¹	7
Horticulture	2 ³	N/O ¹	N/O ¹	2
TOTAL	109(26)²	95(37)²	39(11)²	243(74)²

¹ Not Offered

² Certificates only

³ Two students had completed all requirements for the diploma.

The total of 243 graduates is 39 above the total of 204 graduated in 1965.

Staff Conference

No Staff Conference was held in 1966. Past experience has indicated that April is not satisfactory from the viewpoint of most staff. With the setting of an earlier time for the Departmental Conference, it was felt that the College Staff Conference could be held immediately following. However, the Departmental Conference was not set back early enough to make this possible. Another factor which contributed to the omission of a Staff Conference was the setting up of Staff Conference Committees for Animal Science, Mechanics, Plant Science, Vocational Academics, Farm Management and Business Education. These committees did a very considerable part of the work which previously was attempted at staff conferences. This is not to say that such a procedure eliminates the need for an annual staff meeting.

Staff Changes

During 1966 there were twenty-eight instructional and administrative changes. Ten resigned to take other employment, four were granted leave for professional improvement and fourteen were new appointments of which four were temporary.

New Courses

To meet the need for trained technical personnel in irrigation farming, a two-year Irrigation Technology Course was introduced in the Fall Session, 1966, at Olds only. The maximum enrolment of fourteen students for the first year was attained with two applicants held over for further references.

A special six-week course for a group of twenty-eight female teachers from Uganda was given at the Vermilion College in the Spring Session 1966.

Board of Agricultural Education

The regular Spring meeting of the Board was held March 2nd, 1966. The Acting Chairman, Dr. E. E. Ballantyne, opened the meeting and expressed the appreciation of the Department for the continuing interest and work of the Board members.

The Director reviewed recent government policy decisions regarding the colleges. These included:

1. The Colleges will continue to be administered by the Department of Agriculture.
2. The emphasis will continue to be placed on courses serving the agricultural industry.
3. Maximum enrolment at any one college has been established at 500 students.
4. Extended summer leave regulations were made applicable to instructional staff at the colleges July 1st, 1965.

He also outlined courses presently offered at the colleges and indicated new courses being planned or considered:

Agriculture

1. For those intending to farm or going into the industry.
 - a. General Agriculture
 - b. Plant Science Major
 - c. Animal Science Major
 - d. Agricultural Mechanics Major
 - e. Farm Management Major

} All three colleges
2. For specialized jobs in the industry.
 - a. Horticulture (Olds only)
 - b. Artificial Insemination-Technician (Vermilion only)
 - c. Land Appraisal and Assessment (All three colleges)
 - d. Irrigation-Technician (Started at Olds only, September 1966).

Consideration is presently being given to establishing a course for swine production men. Negotiations are also proceeding with those interested in trained poultry men.

Business Education

Offered at all three colleges with reports indicating excellent acceptance of graduates. In 1963-64 a total of 34 students enrolled. In 1965-66 this figure increased to 89.

Fashion and Design (Merchandising) — Olds only

Previously called "Clothing and Design", the course is now slanted toward preparing graduates for sales jobs, since demand for these people is greater. In 1965-66 there were 22 on course as compared with 10 in 1963-64.

Home Economics

The Home Economics Course, as such, has been retained only at the Vermilion College as a one year (ten months) diploma course. In order to implement a program in home economics similar to agriculture, a new Home Economics, Commercial, Farm Management building is scheduled for construction at Vermilion this year.

The over-all program approach at Vermilion in Home Economics will be somewhat different from the system of majoring set up in Agriculture. Initially, the three-session (ten month) course will be retained but students will be channeled into more specialized training toward the end of the course. At present two fields have been identified: Merchandising and Institutional Management. Future developments could well include other specific fields and either a longer course (say four sessions) or post-graduate work in specialized areas.

In general discussion it was reported that a course for training Home Aides was being offered in Saskatchewan. The Secretary will secure further information.

It was also suggested that a course in Agri-Business should be offered at the Colleges.

With regard to training skilled farm workers, it was stated that young men would be more inclined to take a course if farmers were prepared to spell out a specific basic salary plus fringe benefits. It was felt that, at present, most farmers cannot successfully compete with industry in hiring skilled workers.

The Director referred to a previously suggested symposium on Home Economics and stated that such a meeting would be held at Vermilion when the new Home Economics, Commercial, Farm Management building there was completed probably in late 1967. At that time the course in Home Economics would be reorganized and, if successful, could be established at the other Colleges.

A motion was passed providing for two meetings of the Board each year. The Spring meeting would be devoted to receiving

and discussing reports and the Fall meeting would be given mainly to considering matters of College policies.

In presenting this annual report, the Director emphasized that the Colleges are not competing with High Schools in offering high school academic subjects at the Grade XI and XII level. He stated that the primary purpose was to make it possible, at reasonable cost and in the shortest time, for students out of their age group to complete their high school education.

Hon. H. E. Strom addressed the Board briefly. He felt that the basic policy decisions stated by the government relating to the Colleges had proven good. He was pleased to note that between 75 and 80% of the graduates in Agriculture return to the farm.

The Minister stated that, when the present Colleges become filled to their increased capacity, probably the government would give consideration to the establishment of a fourth college in the Southern part of the province.

In the matter of training skilled farm workers, he felt that there were a number of problems to be solved before this area of instruction could be introduced on a sound basis.

Continuing the discussion of the Director's report, it was suggested that, in Canada's Centennial Year, there would be the need for short courses at the Colleges in Tree and Shrub Planting and Maintenance. The Director and Principals were asked to investigate further.

The Artificial Insemination Course Advisory Committee recommended that the course be continued at Vermilion in spite of low registration in January 1966 until the employment situation for graduates clearly indicates at least temporary suspension. The recommendation was adopted by the Board.

Dr. Bentley reported that, over the past five years, one quarter of the graduates in Agriculture at the University returned to the farm and that, on the average, they were superior students. Placement officers reported that graduates in agriculture received more offers of employment than graduates from any other faculty.

In connection with four one-week courses offered at the Vermilion College for a number of years past, it was reported that the Provincial Fire Commissioner's office had a three storey concrete fire tower for training purposes constructed on the north-east corner of the college farm. Permission to construct was granted by the Department of Agriculture.

Since entrance qualifications for the Horticulture Course and the Irrigation Technology Course have now been established at 67 high school credits or better, it was suggested that consideration should be given to having the same entrance requirements for agriculture. The Director and Principals were asked to consider the matter further and report at the next meeting.

Motions to increase the college Library Fee to two dollars (\$2.00) per session and the Student Board and Room rate from fifty-five dollars (\$55.00) to sixty dollars (\$60.00) a month, with proportionate adjustment in charges to other personnel effective September 1st, 1966, were passed unanimously.

A motion asking that the government be requested to consider the establishment of a tuition fee structure for students in agriculture and home economics that relates to fees charged for other courses, was passed.

The Board approved, in principle, the presenting of Diplomas or Certificates to students in Agriculture.

As a result of the decision taken at the Spring meeting of the Board, the first regular Fall meeting was held October 25th, 1966, in Room 312 of the Legislative Building.

Dr. E. E. Ballantyne chaired the meeting in the absence of the Minister.

The Secretary circulated material from the Saskatchewan Department of Education regarding a girls' course titled "Domestic Service Training". In the introduction, the course was described as suitable for the slow learner or for handicapped persons. After considerable discussion, it was agreed that this course would probably not enjoy very bright prospects in Alberta at present.

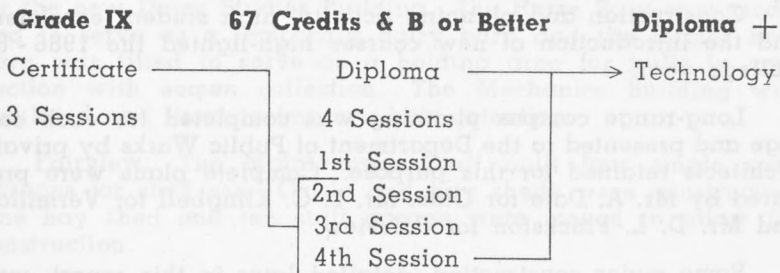
Mrs. Simonson agreed to examine the Saskatchewan course in greater depth and Mrs. Johnson was asked to secure information on the Ontario program.

The Director reported that the colleges would be involved in a series of short courses designed to give information to employees of towns, villages and municipalities throughout the province who will be concerned with tree and shrub planting and maintenance. Such activities are directly connected with many Centennial Projects in Alberta. The program is under the direction of Mr. P. D. McCalla, Provincial Horticulturist, and will be offered this spring.

Proposed entrance requirements for the agricultural courses were discussed in detail.

PROPOSED ENTRANCE REQUIREMENTS FOR AGRICULTURE

1. Certificate Course — Grade IX Minimum — 17 years (taught as a separate course)
2. Diploma Course — Grade XI — 70 High School credits including:
 - a. General
 - b. Animal Science Major
 - c. Plant Science Major
 - d. Farm Management Major
 - e. Agricultural Mechanics Major

ARTICULATION CHART

A motion was made and carried that the proposed entrance requirements and articulation for courses in agriculture be endorsed and made effective in the 1967 - 68 academic year.

After considerable discussion on tuition fees, it was moved and carried that the following schedule of tuition fees would be effective September 1st, 1967.

TUITION FEES PROPOSED

	Existing Fee	Proposed Fee
Academics	\$20.00 per subject	No change
Agriculture	— none —	\$20.00 per session
Artificial Insemination	\$23.00	\$20.00 per session
Commercial	\$20.00 per session	No change
Fashion and Design	\$10.00 per session	\$20.00 per session
Home Economics	— none —	\$20.00 per session
Horticulture	\$12.50 per session	\$20.00 per session
Irrigation Technology	\$12.50 per session	\$20.00 per session
Survey School	\$5.00	No change
Appraisal and Assessment	\$25.00 for three weeks	No change
Welding (Short Course)	\$1.00 per hour or \$20.00 per week	No change

NOTE: Subsequently the fees for Welding were revised to bring them into line with fees for similar courses offered by the Extension Branch of the Department.

They now are:

Welding (Short Course) 50¢ per hour or \$10 per week
(whichever is less)

Motion: that the Board is concerned with the possibility of needless duplication of courses by various agencies and that the Government be asked to create an authority to co-ordinate the establishment of courses. Carried.

It was agreed that the Director and the Principals should meet with Department of Education officials to work out the question of how many high school credits may be allowed for the various subjects taken by students at the Colleges.

The question of whether or not Correspondence Courses should be offered by the Colleges was introduced by the Secretary.

Motion: that the offering of Correspondence Courses at the Colleges be held in abeyance until the need for them is more evident. Carried.

The 1966 - 67 Term

Construction and planning activity, high student enrolment and the introduction of new courses high-lighted the 1966 - 67 College year.

Long-range campus planning was completed for each college and presented to the Department of Public Works by private architects retained for this purpose. Complete plans were prepared by Mr. A. Dale for Olds, Mr. L. C. Klingbell for Vermilion and Mr. D. L. Pinckston for Fairview.

Some major construction, detailed later in this report, was undertaken at each college in accord with the master plan.

A course in Land Appraisal and Assessment was offered at each College. A two year course in Irrigation Technology was initiated at the Olds College.

Over crowding of students was experienced at each college in the winter session. The situation was particularly acute at Olds.

Student Assistance Act Loans, Grants and Prizes

Assistance made available to students in the 1965 - 66 College Year was as follows:

	Olds	Vermilion	Fairview	Total
Loans	17,830.00(38) ¹	9,585.00(22)	16,545.00(39)	43,960.00(99)
Loan Remissions ...	3,405.70(22) ¹	1,689.40(12)	2,454.50(19)	7,549.60(53)
Prizes (\$50 each)	750.00(15) ¹	350.00(7)	300.00(6)	1,400.00(28)
TOTAL	21,985.70	11,624.40	19,299.50	52,909.60
Number of Students				
Assisted	51(35) ²	28(28)	41(33)	120(96)

¹ Number of Students

² 1964 - 65

MAINTENANCE AND CONSTRUCTION

Maintenance

Olds: The College Maintenance Staff constructed a 35 ft. x 50 ft. temporary library. When library facilities are available in the new student residence, the temporary building will be moved to provide much needed storage space. Maintenance construction also included a pole-frame livestock shed, a pump house and installed a septic tank and disposal field for a staff house on the newly acquired half-section of farm land.

A normal program of painting and minor repairs was carried out.

Vermilion: Major renovation of the Student Residence was continued and the job by Maintenance Branch of the Department of Public Works is nearing completion.

The College Maintenance Staff completed a large concrete pad, new fencing and stock squeezes in the livestock yard. The

old Dairy Barn and Milk House were removed to make way for the new Dairy Studies Building. The Horse Barn was modified to serve as a temporary dairy barn and the former Beef Barn was fitted to serve as a holding area for bulls in connection with semen collection. The Mechanics Building was insulated and lined to improve heat retention.

Fairview: The Maintenance Staff built four single stall garages for staff use. Cattle and hay sheds were constructed. One hay shed and ten stall garage were moved to allow for construction.

A program of normal maintenance of all buildings was carried out.

Construction

Olds: A new Animal Science Building was constructed. A start was made on the new Student Residence which, when completed, will house 500 students. Two staff Residences were nearing completion at year's end.

Vermilion: A new Dairy Studies Building and an addition to the recently constructed Animal Science Building were nearing completion at the close of 1966. Construction on the Home Economics Farm Management, Commercial Building was well commenced. A Storm Sewer extension and new Water Line were brought to the campus. Construction of four staff houses was well underway.

Fairview: Three new staff houses were constructed, two on campus and one over-town. A Farm Shop and Machinery Shed was constructed by the Department of Public Works. Tender for the new fifty-bed Student Residence for girls was let.

Enrolement for the Year 1966 (see page 104).

Programs Beyond the College Year

Special programs at Olds included a Hunter Training Course, Progressive Farming Days, Conference for district High School Counsellor Conference, F.U.A. Convention, A.W.I. Girls' Club Week, Farm Women's Week, 4-H Club Week and Provincial Eliminations, Horticultural Week, Danish Farmer's Visit, Quebec Exchange Students, Welding Short Course and many miscellaneous meetings. The total Person-Days involved was 8,978.

At Vermilion there were two 4-H Leadership Courses, F.U.A. Workshop, Alberta Safety Council Clinic, 29 4-H Club Meetings, five Alberta Institute of Agrologists' Meetings, an Agricultural Chemicals Short Course, a Silage Field Day, A.W.I. Convention, two 4-H Club Weeks, an Agricultural Fieldmen's Meeting, two High School Guidance Counsellors' Meetings, a Veterans' Land Act Short Course and a number of other groups accommodated. Approximately 3,230 Person-Days were recorded in addition to regular classes.

ENROLMENT AT EACH COLLEGE FOR THE WINTER, SPRING AND FALL SESSIONS, 1966

Course	OLDS			VERMILION			FAIRVIEW			TOTAL		
	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall
Agriculture	187(144) ¹	42(38)	103(109)	120(111)	15(N/O)	81(92)	68(55)	N/O	68(70)	375(310)	57(38)	252(271)
Animal Production (A.I.)	N/O ²	N/O	N/O	6(10)	N/O	N/O	N/O	N/O	N/O	6(10)	N/O	N/O
Appraisal and Assessment	N/O	18(16)	N/O	N/O	10(N/O)	N/O	N/O	6(N/O)	N/O	N/O	34(16)	N/O
Commercial	35(21)	35(20)	18(35)	32(30)	30(30)	36(36)	22(18)	17(15)	26(25)	89(69)	82(65)	80(96)
Fashion & Design	21(11)	21(11)	19(23)	N/O	N/O	N/O	N/O	N/O	N/O	21(11)	21(11)	19(23)
Home Economics	N/O	N/O	N/O	9(7)	7(7)	9(10)	N/O	N/O	N/O	9(7)	7(7)	9(12)
Horticulture	24(22)	12(N/O)	23(25)	N/O	N/O	N/O	N/O	N/O	N/O	24(22)	12(N/O)	23(25)
Irrigation Technology	N/O	N/O	15(N/O)	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O	15(N/O)
Motor Mechanics	N/O	N/O	N/O	N/O	N/O	N/O	13(6)	12(11)	11(19)	13(6)	12(11)	11(9)
Welding	N/O	N/O	N/O	N/O	N/O	N/O	11(6)	N/O	9(9)	11(6)	N/O	9(9)
Total Vocational	267(198)	128(85)	178(192)	167(158)	62(37)	126(138)	114(85)	35(26)	114(113)	548(441)	225(148)	418(443)
Academics ³	15(NIL)	8(NIL)	13(8)	27(6)	9(16)	15(12)	28(31)	33(27)	31(28)	70(37)	50(43)	59(48)
TOTAL	282(198)	136(85)	191(200)	194(164)	71(53)	141(150)	142(116)	68(53)	145(141)	618(478)	275(191)	477(491)

¹ 1965² Not offered³ Students with 50% or less academic program are listed as vocational students

Special events at the Fairview College included: two Crop Insurance Meetings, two Farm Water Meetings, two Soil Short Courses, five Co-operative Business Administration Meetings, Horticultural Judging School, Weed Control Meeting, Alberta Dairymen's Association, four Poultry Council Meetings, F.U. and C.D.A. Meetings, Community Development Symposium, 4-H Club Week, High School Counsellor's Meetings and a number of other meetings and conferences for a total of approximately 4,156 Person-Days.

Appreciation:

As in previous years, the Colleges enjoyed very fine support from a number of commercial companies, farm and other organizations and a very considerable number of individuals. The Department of Agriculture voices its sincere appreciation to all of these companies and individuals.

Other Departments of the Provincial Government, the University of Alberta, and the Government of Canada, have been most helpful. Their assistance, financial and otherwise, is gratefully acknowledged.

The excellent co-operation of college principals and their staffs has been very much appreciated.

OLDS AGRICULTURAL AND VOCATIONAL COLLEGE

The year 1966 saw continued progress at the College. Existing courses were up-dated and changed and a new course for Irrigation Technologists was introduced. Registrations reached new highs in the regular courses and the facilities were used extensively for other courses, conferences and extension activities.

A new Animal Science building, started in April, was completed at the end of the year. Plans for a new residence to accommodate 500 students were completed and the contract was let on November 10th. An official sod turning ceremony was held in conjunction with the fall Alumni Reunion on November 25th. Participating were Honourable Harry E. Strom, Minister of Agriculture, Frank S. Grisdale, Principal for 1919 to 1930, and Alberta Minister of Agriculture in 1934 - 35; Frank Stevenett, president of the Alumni Association and a member of the first graduating class (1951), and Honourable Robert Clark, Minister of Youth and M.L.A. for the Olds-Didsbury constituency. At the end of the year construction had started. Two staff residences started in October were partially constructed and a new building to serve as a temporary library was put into use in October.

The purchase of additional land provided for foreseeable needs.

Enrolment and Instruction

Enrolment for the year was as follows:

	Winter	Spring	Fall
Agriculture			
First session	47	9	55
Second session	74	9	9
Third session	26	22	28
Fourth session	21	2	7
Horticulture			
First year	12	—	12
Second year	12	—	10
Irrigation Technology			
First year	—	—	14
Fashion and Design	20	17	18
Commercial	35	35	18
High School Academics	16	9	13
Appraisal and Assessment	—	16	—

Enrolment was equal to or above that for 1965-66 except for the new class in Commercial which enrolled in September. It was only half that of 1965-66. There seems to be no obvious reason for this and it is expected that the class will build up again in 1967 as graduates have established an excellent reputation for the course.

In the winter session for high school academics, which started on December 5th, twenty-two students were registered.

In the winter session some student unrest was evident but the fall session was one of the best in our experience from the standpoint of behavior and co-operation.

Extra-Curricular Program

The development of a satisfactory extra-curricular program for present day conditions has been difficult but good results are now being realized. Intramural programs are carried out under a house-league system with houses named for people who have made an important contribution to the College, including Marshall, Grisdale, Holeton, Longman, Murray and Rogers. The program includes sports, dramatics and social activities.

A social committee operates for special events not covered by the house-league program.

Senior teams in basketball and volleyball are entered in the Western Inter-College Conference with the Junior Colleges, Technical Institutes and the University of Calgary.

Special Lectures and Programs

For the second consecutive year, Agricultural and Horticultural students were required to view the five-day T.V. program "This Business of Farming" and were held responsible for the material covered in it.

In the winter session, programs on Safety and on Family Life were conducted by specialists for Edmonton and Calgary. Both were well received and considered to be very worthwhile.

Special courses were given to students in Fashion and Design by instructors hired especially for them. Mr. J. Brown of Olds gave a course in Grooming; Mr. R. MacInnes of Calgary a course in Salesmanship and Mrs. W. Gueldenhaar, one in Clothing Alterations.

Special lecturers at the college during the year included Mr. C. L. Usher, Supervisor of 4-H Clubs; Dr. C. F. Bentley, Dean, Faculty of Agriculture, University of Alberta; Dr. W. T. Andrew, Professor of Horticulture, University of Alberta; Dr. L. Welsh, District Agriculturist, Olds; Mrs. E. Clarke, District Home Economist, Olds; Mr. C. Norman, Workmen's Compensation Board, Edmonton; Mr. J. Parr, Manager, Bank of Montreal, Olds; Mrs. Chatelaine 1966, Calgary; and Miss Helen Moseson, Faculty of Home Economics, University of Alberta, Edmonton.

Student Accommodation

With enrolment in excess of housing accommodation in the Winter session, a number of steps were taken to meet the problem. Weak students were deferred to the spring session; late applications were not accepted; the house originally used as a principal's residence was turned into a residence for 15 female students, thereby clearing one floor of the students' residence for about 30 male students, and a total of 41 students lived out of residence. Those living out at the request of the Administration, received a subsidy of fifteen dollars per month, as the problem had not been foreseen in time to forewarn them.

Visitors' Day

The annual Visitors' Day was held on Saturday, March 12th, with about nine hundred people attending. There was keen interest in the displays and demonstrations. A highlight was the dress review which was staged twice by the class in Clothing and Design.

Graduation and Home Coming

For the second consecutive year, Graduation and Home Coming were combined. These events were held on Friday, June 24th with Premier E. C. Manning as speaker. About 900 people attended.

Greetings from the Department of Agriculture were brought by J. E. Hawker, Director of the Agricultural and Vocational Colleges; from the Alumni Association by Gordon Stiles, President; and from the Class of 1916 by Dr. H. R. Thornton, Professor Emeritus (Dairying), University of Alberta. Class Valedictorian was Mr. Brian Dumbeck of Calgary.

Prizes for proficiency in various fields were awarded to 11 students. Diplomas and certificates were awarded as follows:

	Diplomas	Certificates
Agriculture	58	—
*Horticulture	2	—
**Commercial	7	26
Clothing and Design	16	—

*Two students in Horticulture had completed all requirements for the diploma. The remainder participated in graduation but did not receive their diplomas until summer assignments had been completed.

**Commercial students who excelled in all subjects received diplomas. All who qualified received certificates.

Classes of 1916, 1926, 1941 and 1956 were specially honored at the Home Coming on their 50th, 40th, 25th and 10th anniversaries.

Course Additions and Changes

Agriculture

The course in Agriculture was thoroughly reviewed and changes were made in content and organization. The course length was increased from a minimum of 3 sessions to 4.

Decisions were made to raise entrance requirements for the diploma and to introduce a certificate course for applicants who cannot meet the higher requirement. These changes are to come into effect in 1967.

Commercial

Minor changes were made in the content and organization of the commercial course. Entrance requirements were changed to allow for a qualifying examination to be written by applicants who could not meet a fairly high standard in English and Spelling.

Irrigation Technology

To meet a need for trained technical personnel in the irrigated areas of southern Alberta, a two-year Irrigation Technology course was introduced in the fall of 1966 and 14 students registered. Most of these were mature men already employed as technicians by the Alberta and Canada Departments of Agriculture. The course, developed by a very strong committee, is intended to provide education in this field for technicians and irrigation farmers. A permanent advisory Committee was appointed by the Minister of Agriculture. Mr. Murray Wilde of the Water Resources Division was loaned to the College for the first year to help launch the course. Competent staff will be added on a permanent basis in 1967.

In addition to two 12-week sessions for two years, students will be required to complete a three-week drafting and survey school and at least four months acceptable employment in the field of irrigation.

A large dugout and irrigation equipment provide facilities for demonstrating irrigation methods. An adjoining 20 acre field has been levelled for this purpose as well.

High School Academics

Under this program Grade XII subjects required for a High School diploma and those required for entry to the faculty of Agriculture in Alberta are offered. It is of particular value to students with less than a full high school year to complete and to older students because it is operated on a trimester system. Registration was as follows:

	Winter	Spring	Fall
English 30	4	2	—
English 33	2	1	—
Social Studies 30	—	2	6
Mathematics 30	7	6	8
Chemistry 30	—	5	6
Physics 30	12	—	—

At the end of the year, 21 students had enrolled for the Winter session.

Fashion and Design (Merchandising)

An Advisory Committee for the course in Clothing and Design was named by the Minister of Agriculture. On the recommendation of the committee the name of the course was changed to Fashion and Design (Merchandising) and the course was revised with a view to better qualify students for the types of employment available.

Appraisal and Assessment

The three-week course in Appraisal and Assessment was offered for the second consecutive year in April and May. To a greater degree than in 1965 the course was given by college personnel. Only a very limited amount of outside assistance was received.

At the end of the year plans were underway for a three-month course open to people with no experience but interested in employment in the field.

Extension Activities

During the year, Instructors participated in extension work over a wide area. A major phase of this was participation in the extension program organized by the extension office in Olds. For this, considerable use was made of college facilities, as well as staff. The greatest demand is for judges of Horticultural shows and Horticultural sections at fairs. There were between 15 and 20 shows judged. The largest function held at the college was "Progressive Farming Days", a four-day program of lectures and equipment displays with a total attendance of about 1,700 people.

In November, 13 adults took a welding course at the college while applications from a much larger number were deferred until 1967.

The facilities of the college were used by local extension workers for various group and committee meetings. It was also

a meeting place for other agricultural groups such as the F.U.A., the Artificial Breeding Association, the Seed Cleaning Co-operative and others.

A group of 80 Danish Farmers visited the college in September as part of a conducted tour of Canada and the United States.

A group of 30 Quebec students visited the college in July.

Non-agricultural groups using the facilities of the College included the Fish and Wildlife Branch for a series of Hunter Training Schools from which 57 people graduated, and the Olds Chamber of Commerce in co-operation with the Extension Department, University of Alberta, for two evening courses for people engaged in the operation of small businesses. A total of about 40 people enrolled in two 8-week courses held one evening per week.

4-H Events

The College continued a close association with the 4-H organization. About 45% of the students had a 4-H background; a 4-H Campus Club operated throughout the year; one 4-H Club Week and Provincial Eliminations were held at the College. Two students attended National 4-H Club Week; two students assisted with judging at the Provincial Junior Seed Fair in Calgary and numerous local and district 4-H functions were held at the college.

The following is a list of events held at the College during the year.

Month	Event	Attendance	Person Days
January	—Hunter Training Course	57	456
February	—Progressive Farming Days	1,700	1,700
March	—Visitors' Day	900	900
April	—W.I. Tea and Handicraft Display	75	75
May	—High School Counsellors' Conference	25	25
June	—F.U.A. District Convention	100	100
	—W.I. Constituency Conference	100	100
	—Graduation and Home-Coming	900	900
July	—Alberta Women's Institute Girls Club Conference	125	500
	—Farm Women's Week Plus Daily Visitors	61	350
	—Quebec Students	30	30
	—4-H Club Week	180	900
August	—4-H Eliminations	250	500
	—Horticultural Week	150	150
September	—Danish Farmers	80	80
November	—Welding Course	13	117
	—Sod Turning for Student Residence and Alumni Dance	400	400
	—Courses for Small Businesses	40	200
Long-Period	—Total Attending Extension and Miscellaneous Meetings	1,495	1,495
	—Total Person Days		8,978

The foregoing gives an idea of the use being made of the College but does not include the many individuals and small

groups who come for information throughout the year. A conservative estimate of these would be about 1,000.

Publicity

To supplement Head office publicity, a weekly release was sent to all weekly and daily papers in Central and Southern Alberta as well as to Radio and Television stations in the area. A radio program, "College Calendar" was continued on radio station C.J.D.V. Drumheller until the end of June. It was a five-minute program which appeared three times a week. In October, a fifteen minute television program was arranged with television station C.K.R.D.-T.V., Red Deer to appear once a month as a part of their agricultural program "Rural Ramblings".

Staff members spoke at a number of High School Career Events and to several Home and School Associations during the year.

A new venture was the holding of conferences for High School counsellors. Two were held at the college with a total of 25 counsellors attending. This will be repeated as it was well received and was effective. A recommendation by the counsellors that in addition to the calendar, a separate sheet be prepared for each course offered, was being developed at the end of the year.

Instructional and Administrative Staff

Miss F. E. Jeffrey, R.N., resigned from the position of College Nurse and Dean of Women on June 30th to return to University; W. F. Arthur resigned from the position of Instructor in Academics in March but returned to the staff in September; R. H. Bradley, Instructor in Plant Science left at the end of March to return to the farm as did Mr. G. Hazlett, Instructor in Plant Science and Farm Management; L. V. Harris, Instructor in Academics resigned at the end of June for travel in Europe and Africa; R. G. McFadyen returned from Educational leave in April and J. K. MacKenzie, who had relieved him, left at that time; Mrs. D. Sutherland, Instructress in Commercial, transferred in August to the Department of Public Welfare in Olds; K. Saito, who joined the Plant Science staff in September, returned to his former position with the Canada Department of Agriculture at Lethbridge, in December.

During the year, in addition to his teaching duties, Mr. W. J. Collin undertook Administrative duties directly related to the instructional program and acted for the Principal in his absence.

Instructional and Administrative staff at the end of the year were as follows:

J. E. Birdsall, M.Sc., P.Ag.	— Principal
Mrs. A. Armstrong	— Dietitian
W. F. Arthur, B.Sc.	— Community Organization and Human Relations
H. Barber, B.Ed.	— Academics (Math & Science)
J. B. Borgel	— Accountant
E. O. Bryant	— Maintenance Supervisor

W. M. Burton, B.S.A., P.Ag.	— Farm Mechanics
Mrs. K. M. Chesney	— Secretary
D. F. Chiliak	— Assistant Dean of Men
Mrs. E. Collin, B.Sc., H.Ec.	— Fashion and Design
W. J. Collin, B.Sc., P.Ag.	— Plant Science
Mrs. E. Duncan	— Typist
D. R. Felstad, B.Sc.	— Farm Mechanics
Miss L. Fisher	— Stenographer
B. J. Godwin, B.Sc., B.Ed., P.Ag.	— Horticulture
Mrs. B. Gough	— Commercial
Mrs. M. Gravistin, C.N.A.	— Dean of Women
Miss M. D. Grimson	— Commercial
G. B. Harrison, B.S.A., P.Ag.	— Farm Mechanics
Mrs. K. L. Hicks, R.N.	— Nurse, Assistant Dean of Women
R. Kroon	— Horticulture
R. G. McFadyen, B.E.	— Farm Mechanics
Mrs. D. Moritz	— Librarian
J. R. Nielson, B.Sc.	— Animal Science
G. A. Ogston	— Farm Manager
A. A. Qually	— Recreation Supervisor
W. D. Ratcliff, B.Sc.	— Animal Science
Mrs. D. Robbins	— Academics (English and Social Studies)
L. B. Seeger	— Metal Work
H. W. Sutherland, B.Sc.	— Farm Management
M. J. Tsujita, M.Sc.	— Plant Science
R. P. Warrington, F.R.G.S.	— Dean of Men, Public Speaking
G. S. White	— Administrative Officer
M. Wilde, B.Sc., P.Ag.	— Plant Science (Irrigation Technology)
S. B. Wilton, B.Sc., P. Ag.	— Animal Science
M. A. Wriglesworth, B.Sc. (Ag.)	— Academics (Math and Science)

Student Placement

About 25 per cent of Agricultural students and nearly all students in other courses seek employment while not attending the College and upon graduation. To meet this demand a placement service is operated. It functioned very effectively during the year.

Financial Aid for Students

Students received financial aid during the year in the form of Bursaries, Scholarships, Prizes, Loans and Grants. This aid comes from interested firms and organizations, from the Surplus Wheat Board Monies Trust Fund, from the Queen Elizabeth Loan Fund and from the Grisdale Loan Fund operated at the College. During the year, 61 students received a total of \$22,377.00 in aid. Loans amounted to \$16,392.00, Prizes \$500.00 and Scholarships and Bursaries, \$3,645.00.

Grounds and Plots

A favourable season coupled with good planning, resulted in a very fine showing on the grounds; improvements were carried out in keeping with the overall campus plan.

An unusually large supply of vegetables was produced and harvested in good condition.

Plant material for teaching purposes was also produced in ample quantity.

The program of "Breeders' Seed" production of Olds Creeping Red Fescue was continued and a test of Rye Varieties was carried out in co-operation with the Experimental Farm at La-combe.

Other projects cared for by the Horticultural Division were the keeping of weather records, taking water table readings and soil moisture readings in the top four inches of soil for use in connection with the teaching of Irrigation and the preparation of floral arrangements for offices and special events.

Construction and Maintenance Program

During the year a new Animal Science Building was constructed; plans were completed for a new 500-student residence, contract let and construction started, and two staff houses were nearing completion. These projects were carried out under the direction of the Department of Public Works with A. Dale and Associates as Architects for the large buildings and for overall Campus Planning.

The College Maintenance staff built a 35 ft. x 50 ft. building for use as a temporary Library. It went into use in October. They also built one pole-frame shed for livestock, a building to house the steam line controls, a pump house at the Irrigation Dam, and installed a septic tank and field for a house on the newly acquired farm.

A normal maintenance program was carried out, including interior and exterior painting, repairs of all types, replacement of hog fences, and sidewalks and building or replacing of needed facilities in instructional and residential buildings.

College Farm

Above average rainfall throughout the cropping season delayed seeding and all following operations. As in the year previous, grain was lost through lodging and shattering. However, conditions improved in the late fall, allowing the crop to be taken off with better than average yields. The first cutting of hay was above average in yield but below in quality, due to intermittent rains. Very little second cut was put up in good condition.

An additional 640 acres immediately south of the College was purchased in June. Considerable clearing, cleaning up, and summerfallow was done during the summer in preparation for cropping in 1967.

Summary of Crops Harvested:

Crop	Acreage	Yield
Wheat	25	1,800 bushel
Oats	55	3,200 bushel
Barley	97	5,000 bushel
Hay	165	226 ton
Silage	35	120 ton
Pasture	135	

Livestock

During the season excellent grazing was available to the cattle and sheep which took them into the winter in good condition.

An Aberdeen Angus sire was purchased for use in the Shorthorn herd to produce cross-bred animals for teaching purposes.

The Suffolk and Dorset Horn flocks are being built up by the use of top quality sires.

Two Yorkshire boars were purchased as sires for the swine herd.

Performance testing programs were continued with all breeds of stock on the farm.

Inventory of Livestock as of December 31st, 1966

Holsteins	43
Shorthorns	38
Yorkshire Swine	110
Sheep	81
Poultry	290

Farm Sales for Year Ending December 31st, 1966

Livestock	\$20,114.03
Dairy Products	6,386.58
Poultry and Eggs	1,236.87
Vegetables	724.90
TOTAL	\$28,462.38

VERMILION AGRICULTURAL AND VOCATIONAL COLLEGE

Routine operations during the Winter Session even with capacity enrolment provided the only respite in a year of great activity in the continued curricular and physical development of the College. Major renovation projects in the Student Residence were commenced in April by the Maintenance Branch of the Department of Public Works. Only a few finishing touches are required for completion in 1967. The kitchen and Girls' Residence were completely renovated — new equipment and furnishings are being installed throughout. The front entrances have been enclosed and properly enclosed stairwells have been built at the back of the building to provide a highly functional and pleasant interior and a traditional exterior. A very important benefit of the renovation is that a number of hazards have been eliminated and new safety features added. Again, members of the Maintenance Branch of the Department of Public Works were most co-operative and made possible the continuation of a heavy schedule of events. Mr. John Bell, Construction Foreman, his assistant during the major part of the summer, Mr. W. Moroz, and the work crews are to be commended for the organization of a major undertaking.

Instruction

The Home Economics and Commercial programs were continued with no changes in the curriculum. Student response has been gratifying and job placement was no problem; more graduates could have been placed had they been available. The course in Animal Reproduction was offered in the Winter Session only. The response to this course was somewhat disappointing as the Table of Enrolment will show. However, the image of, and remuneration for this type of training is changing positively. This is indicated by the fact that the number of applications for the Winter Session 1967 was tripled and the numbers had to be reduced to a somewhat higher than optimal number of twelve by turning down later applicants.

For the first time a course in Appraisal and Assessment was offered. Applications were accepted only from people who were either self-employed or employed by some agency in areas requiring a knowledge of land and property appraisal or assessment. The response was gratifying and the program will be continued in 1967. Specialists from the University of Alberta and the Department of Lands and Forests assisted in this program and weather conditions made it possible to conduct field trips as required.

The number of students wishing to complete their High School Diploma or Senior Matriculation appears to be on the increase. The Grade XII subjects offered on a sessional basis have served to direct young men and women into professional or technical fields. In fact, the whole program at the College is offering many young people in the Province an opportunity to get back into the educational stream following a period of time as High School "drop-outs".

The Diploma Course in Agriculture continues to be popular and continued for the Winter and Spring Sessions with no changes from the previous year. Agriculture was offered in the Spring Session for the first time. The Spring Session provides a much better opportunity for field trips and outdoor laboratory exercises than the Fall or Winter Sessions and will be a regular feature. A general change in the Agriculture program was introduced in the Fall Session to new students. The minimal requirements for a Diploma in Agriculture are 1600 hours of class work, where formerly 1200 hours were required. Enrichment of the program was designed to bring it into line with accepted Technician Training standards. This was a natural development and the need was indicated by the percentage of former students electing to stay for another Session of training even though they had completed Diploma requirements.

The demand for graduates for employment in Agri-Business continues to exceed the supply.

The Fire Officer Training Program has been established as a permanent part of the program at this College. This course is directed by the Office of the Fire Commissioner and instructional staff is also provided from that office. College residential and classroom facilities are used and these programs are of-

ferred during the Spring Session and mid-summer months, a period when College facilities are not taxed by high enrolments in Agriculture. The co-operation and courtesy of the staff from the Fire Commissioner's Office is exemplary and it is a pleasure to work with these gentlemen. A Training Tower was constructed on college land to facilitate more advanced training in fire fighting and rescue work.

Special Course

A group of 28 teachers from Uganda attended courses in Education at the University of Alberta during the Fall and Winter term 1965 - 66. University authorities and the Canada Department of External Affairs felt that it was desirable to extend the experiences of these teachers. An arrangement was made between the University of Alberta, Extension Department, and the College for a six-week period of training, that would provide the following:

1. A completely unstructured group experience
2. Learning by doing and experiencing
3. Community development and its relevance to situations in Uganda.

College teaching staff was involved and the experience was positive and reciprocal in nature. Mr. and Mrs. C. A. S. Hynam in charge of the program directed events most skillfully. A very fine rapport developed between the Uganda teachers and staff involved.

Enrolment

Enrolment for the year was as follows:

Session 1966	Winter		Spring		Fall	
	M	F	M	F	M	F
1st Session Agriculture	19	1	0	0	46	2
2 - 4 Session Agriculture	99	2	15	0	32	1
Animal Reproduction	7	0	0	0	0	0
Home Economics	0	9	0	7	0	9
Commercial	3	33	0	31	3	33
Grade XII Subjects only	3	5	6	6	7	9
Fire Officers			30	0*		
Uganda Teachers (6 weeks)			0	28		
Appraisal and Assessment (3 weeks)			10	0		
TOTAL	131	50	61	72	88	54
TOTAL STUDENTS	181		133		142	

* Eight one-week courses average 30 men per course

Graduation 1966

On June 30th, 1966, J. E. Hawker, Director, Alberta Agricultural and Vocational Colleges, Capt. R. A. Oates and R. W. Snelgrove, President of the Alumni Association, participated in the Graduation Ceremonies. Colonel E. W. Cormack, a former member of the staff, addressed the Graduation Class. The Alumni Association joined with the Graduating Class for the Banquet and Rose Ball.

Diplomas and Certificates were presented as follows:

	Diplomas	Certificates
Agriculture	51	—
A.I. Technicians	—	5
Home Economics	7	—
Commercial	32	—
TOTAL	90	5

49 students in the Graduating Class received at least Honors standing.

Winners of Major Scholarships and Awards:

- North-Western Utilities prize for General Proficiency in Home Economics — Pam McBlane of Red Deer, Alberta
- Hazel Hurt Trophy for General Proficiency in Business Education — Sandra Hilts of Lloydminster, Alberta.
- Vermilion Savings and Credit Union prize for General Proficiency in Agriculture — Keith Boulter of Rosalind, Alberta.
- The V.A.V.C. Staff Medal for Outstanding Leadership in the Student Body and High Academic Achievement — William Thomson of Alberni, British Columbia.

Donors of prizes to members of the Graduating Class were:

- The Spinning Wheel, Vermilion
- Tom Boy Stores, Vermilion
- MacMillan-Brimacombe Agencies Ltd., Vermilion
- Long's Drug Store Ltd., Vermilion
- Vic's Pharmacy, Vermilion
- Canadian Utilities Ltd., Vermilion
- Vermilion District Co-operative Association, Vermilion
- Canada Packers Ltd., Edmonton
- Alberta Livestock Co-operative, Edmonton
- Canadian Imperial Bank of Commerce, Vermilion
- Vermilion District Graduate Nurses' Association, Vermilion
- Taylor, Pearson and Carson Ltd., Edmonton
- Northern Alberta Dairy Pool, Edmonton
- Stephens Ltd., Vermilion
- Students' Assistance Act, Edmonton

Scholarships and Assistance to Undergraduates

Many organizations provide incentive to young women and men to continue their formal education by providing cash bursaries and scholarships to undergraduates at the College. These are awarded to the winners during a Color Night held at the end of each Session. Donor representatives are invited to attend these functions so they may have the opportunity to meet the successful students and to make the presentations formally.

Scholarships were awarded as follows in the past year:

- The Jack Tucker Scholarship for Highest Standing in the Animal Science Major — Barry Fahrion of Rosevear, Alberta.
- The Craigs Limited of Vermilion Scholarship for Highest Standing in the Animal Science Major — Garry Phillips of Waskatenau, Alberta.
- Alberta Pacific Grain for Highest Standing in the Plant Science Major Roy Kubica of Thorhild, Alberta.
- The British American Oil Company Scholarship for Highest Standing in the Farm Management Major — Gary Moses of Vermilion, Alberta.

The Imperial Oil Scholarship for Highest Standing in the Agricultural Mechanics Major — Wyman Lockhart of Viking, Alberta; Melvin Clark of St. Albert, Alberta.

The Robert Gardiner Memorial Scholarship (U.F.A. Co-operative Limited) for Highest Standing in the General Agriculture Program — Jim McLaughlin of Vermilion, Alberta.

The V.A.V.C. Alumni Association Scholarship for General Proficiency in the first two Sessions — Rex Cunningham of Vermilion, Alberta; Barbara Fulks of Waskatenau, Alberta.

Bursaries have been made available to many young people through the courtesy of the following organizations:

United Grain Growers Limited
 The Alberta Wheat Pool
 The Alberta Women's Institute
 The Winnipeg Grain Exchange
 The Wheat Board Surplus Monies Trust
 The Royal Canadian Legion, Alberta Command
 Remissions granted under the Student Assistance Act:

Private Contributions:

Mr. Jack Tucker of Vermilion has made available a substantial sum of monies to assist an Honors Student to continue his studies in Animal Science at a University.

The Gallinger family has set up a Trust Fund in the amount of \$10,000.00 that will provide two \$200.00 bursaries per year for students registering in the Diploma Course in Agriculture at the Vermilion College. These are to be known as "The Claude Gallinger Memorial Bursaries".

The continued interest and generous support of the many donors is very much appreciated.

Non-College Events in 1966

College facilities have been in good demand for public meetings and short courses of an Agricultural or general Educational nature.

	Attendance	Person Days
29 4-H Club Meetings	9 - 11	289
1 Alberta Safety Council Clinic	18	18
1 F.U.A. Workshop — 3 days	23	69
2 4-H Leadership Courses	27	27
5 A.I.A. Meetings — North Eastern Branch	18	70
1 Agricultural Chemicals Short Course	22	22
1 Alberta Grazing Association Meeting	17	17
1 Silage Field Day	67	67
1 Sheep Shearing Short Course	21	21
1 A.W.I. Convention (2 days)	57	114
1 4-H District Public Speaking Competition ...	218	218
1 Agricultural Society and Chamber of Commerce — Annual Banquet	42	42
1 U.C. Men's Retreat (2 days)	22	44
2 F.U.A. District Board Meetings	12	24
2 4-H Club Weeks	332	1,660
1 Agricultural Fieldmen's Meeting	11	11
1 Meeting and Social of International Agricultural Exchange Program participants	47	47

1 Meeting and Social in co-operation with local Rotary Club (National Student Exchange participants)	72	72
2 Public School Guidance Counsellors' Meetings	10	20
1 Chamber of Commerce Meeting	30	30
1 Concrete on the Farm Short Course	16	16
2 University Extension Public Lectures	73	146
1 Alberta Savings and Credit Union Short Course — 3 days	16	48
1 Veterans' Land Act Short Course (2 days)	20	40
1 Alberta Wheat Pool Agents' Short Course (six evenings)	15	90
TOTAL Person Days		3,230

Many other activities in which the College is involved were conducted through the year. The college staff participated in a number of these.

V.A.V.C. Publicity and Public Relations

The College promotes public relations primarily through the extension of its facilities to community service. A cordial and very functional relationship exists between the College and local Extension Staff. College staff participate in a number of Television programs originated from C.K.S.A.-T.V. and regular radio programs are produced at the College. These are primarily for the C.K.S.A. Radio. Releases are also prepared for C.F.C.W. and "Call of the Land" occasionally. The local weekly paper features activities and news of the College regularly.

The College Farm 1966

Following a winter that was reasonably mild with below average snowfall in the later stages, the Spring of 1966 was unseasonably cold and dry. The first tillage of fields was delayed until May 2nd, with cold dry fields to be worked. Wheat was seeded May 11th, the balance of the cereal grain seeding was completed on May 17th. This dry, cool condition persisted until the green feed was seeded June 28th, at which time a general rain occurred. The first cut of hay was very light, at less than 1 ton per acre. A hail storm passed through the district on July 20th severely damaging crops. The wheat and barley being furthest advanced were damaged most and was salvaged for silage. With the near excessive moisture conditions, growth was rapid throughout the fall, resulting in a good crop. Second cut hay was delayed as was the ripening of cereals. An ideal late fall provided a good opportunity for harvesting. Yields were good but quality was poor. An early freeze-up allowed for little fall cultivation.

Cropping Program, 1966:

	Acres	Yield
Wheat	12	60 tons silage (hauled)
Oats	72	4,450 bushels
Barley	24	150 tons silage (hauled)
Hay	132	84 tons
Silage	—	442 tons (second cut hay, barley, wheat)
Fallow	80	
Pasture	78	

Livestock Inventory, December 31, 1966

	Number
Dairy Cattle	49
Feeder Steers	24
Beef Heifers	11
Sheep	59
Swine	94
Poultry	440
A.I. Cows	44

Improvements

Completed Dairy Studies Building
 Remodeled Beef Barn
 Remodeled Horse Barn and Yard
 Rebuilt Beef Yard fencing, feed bunks and cemented main traffic areas
 Built ½ mile fence
 Garage moved to serve as Machine Shed
 Installed pasture water lines and bowls

Farm Sales — January 1, 1966 to December 31, 1966

Vegetables	\$ 299.41
Milk	3,895.25
Cream	1,996.64
Eggs	1,989.05
Poultry	156.41
Livestock for slaughter	11,194.25
Livestock for breeding	186.00
Wool, Hides, Misc.	137.25
TOTAL Farm Sales	\$19,854.26

New Construction, Maintenance College Grounds and Plots

Major items of renovation in the Student Residence were conducted by the Maintenance Branch of the Department of Public Works. The College Maintenance staff laid a large pad of concrete for livestock handling and to eliminate the muddy situations which created problems in the early Spring. New fencing and a system of stock squeezes were constructed to facilitate a more effective system of handling all types of animals. Weighing, vaccinating, branding, etc. can be done efficiently and quickly with a minimum of manpower in the new system.

The old Dairy Barn and Milk House were torn down to provide space for the new Dairy Studies Building. The Horse Barn was modified to serve the dairy herd during construction. The former Beef Barn was also modified to a large extent to serve as a holding barn for bulls and for semen collecting.

The interior of the Mechanics Building was insulated and covered with plaster board to improve the appearance and heat retention of the building.

Additional machinery storage space was provided for the farm and a continuing program of routine preventive maintenance was maintained.

The Dairy Studies Building and Addition to the Animal Science will be in use in early 1967 and the construction of the Home Economics, Farm Management, Commercial Building is well under way. A storm sewer extension was brought into the campus to fit in with a program of Campus drainage and a new water line was brought into the Campus from the Town

of Vermilion system to complete a main water loop from the Town servicing the Campus. This loop will supply a continuous supply of water to the Campus and facilitate the extension of water services to the Fire Tower.

Construction on four staff residences was also commenced late in the year and is scheduled for completion early in 1967.

Landscaping and roads construction was limited by new building construction and general untidiness due to excavations. This situation will not improve for at least another year because of the planned development of roads, water and sewer systems on Campus. A large variety of ornamental plant materials is under cultivation in the Nurseries in preparation for replanting around new buildings and prepared planting sites. The plots and gardens provided adequate materials for classroom purposes and to a large extent for kitchen use.

Teaching and Administrative Staff

A number of staff changes occurred during the year. Mr. O. Stangeland was appointed Maintenance Supervisor, formerly with the Maintenance Branch of the Department of National Defence. Mr. W. C. McLean resigned as Supervisor of Foods and was replaced by Mr. S. Geake from the College staff. Mr. W. R. Williamson transferred to the Attorney General's Department and was succeeded by Mr. A. Earle as Recreation Director. Mr. R. Moore, Instructor in Mechanics, Miss Edith Daugela, Instructress in Business Education, left the College staff for other fields of endeavor while the two Secretaries Miss E. Hancock and Miss B. Strome married and moved to their new homes. An Administrative Officer, Mr. J. Fallas, was added to the staff to relieve the Principal and the Accountant of a number of administrative duties.

Mr. J. Harcus attended Summer School at the University of Alberta, Mr. L. G. Seath at the University of British Columbia. Mr. R. M. Gratz spent a month on additional training in A.I. techniques at Milner, British Columbia. Mr. G. A. Boggs was granted leave for Professional Improvement for the Fall 1966 and Winter 1967 Sessions to attend the University of Alberta.

Staff for the 1966 Academic Year

W. S. Baranyk, B.Sc., B.Ed., P.Ag.	— Principal
D. W. Bell	— Metals Instructor
G. Busse, B.S.A.	— Motors Instructor
O. W. Clouston	— Accountant
Mrs. H. Cross, R.N.	— College Nurse
G. Daugela, B.S.A., B.Eng., P.Ag.	— Mechanics Instructor
A. Earle, B.P.E.	— Recreation Director
H. J. Earle, B.Ed.	— Academics Instructor
J. Fallas	— Administrative Officer
S. Geake	— Dietitian
R. M. Gratz, B.Sc., P.Ag.	— Animal Science Instructor
J. A. Harcus, B.Sc., B.Ed., P.Ag.	— Animal Science Instructor
R. Heller	— Farm Manager

E. H. Horton, B.Sc., P.Ag.	— Animal Science—Plant Science Instructor
Mrs. L. Johnson	— Clothing Instructress
S. Johnson	— Structures Instructor
Mrs. F. L. Kaiser	— Secretary
A. Klar, B.Sc., P.Ag.	— Plant Science Instructor
Miss J. Miyashita	— Business Education Instructress
Miss A. Pinder	— Business Education Instructress
T. J. Quirk	— Dean of Men
Mrs. A. Robinson	— Dean of Women
Mrs. S. Schaab	— Librarian
L. G. Seath, B.Sc., P.Ag.	— Farm Management Instructor
O. Stangeland	— Maintenance Supervisor
K. M. Stone, B.Sc., P.Ag.	— Plant Science Instructor
R. Stredwick, B.S.A.	— Animal Science Instructor
Miss M. Taylor, B.Ed.	— Academics Instructress
Mrs. D. Westman	— Clerk Stenographer
Miss C. Young, B.Sc., H.E.	— Foods Instructress
Mrs. M. Hurt	— Business Education (Part-time)
A. Boggs	— Structures Instructor (On leave for Professional Improvement)

FAIRVIEW AGRICULTURAL AND VOCATIONAL COLLEGE

Enrolment in all classes continued at a high level, thus utilizing residence and instructional facilities to the maximum.

The Course in Agriculture was offered during the fall and winter sessions of the 1965-66 term. The 1966 Fall term commenced on October 17th, since harvesting in the Peace River country is seldom completed prior to mid-October.

The 1966 Commercial Course commenced on September 12th, with an enrolment that filled available accommodation. All 1965-66 graduates of this popular course obtained employment.

Welding and Motor Mechanics Apprenticeship Courses were again offered in co-operation with the Department of Labour. Second year Courses were added and received ready acceptance by way of full registers.

Two Welding Courses of two weeks duration each were offered in response to demands by young farmers from the surrounding area.

A Land Appraisal and Assessment Course commenced April 25th, and concluded May 13th. Six students enrolled in this three week Course offered at Fairview College for the first time.

The arrangement with Fairview High School concerning Academic students continued to receive wide acceptance and attracted students from all parts of the Peace River country. The agreement has allowed students to reside at Fairview College but receive instruction in Grade XII subjects at the High School which operates on the semester system.

Guest Lecturers

The following visitors were guest lecturers for various College classes.

Mr. Leon Martin — Manager, Royal Bank of Canada, Fairview
 Mrs. G. Campbell — Lectured on "Clothing for the Business Woman", Fairview
 Mr. John Milne — District Agriculturist, Fairview
 Mr. Wm. Connor — Federated Co-ops, Fairview
 Mr. N. Soder — Farm Credit Corporation, Fairview
 Mr. S. Walisser — Manager, Credit Union, Freidenstal
 Miss Linda Sorenson — District Home Economist, Berwyn
 Mr. D. W. Pickett — Manager, Canadian Imperial Bank of Commerce, Fairview
 Mr. S. G. Klumpf — Lands and Forests, Edmonton
 Dr. S. Pawluk — Soils Department, University of Alberta, Edmonton
 Rev. G. Wilkinson and Father Loran — Fairview
 Mr. C. Thangavelu — High School, Fairview
 Messrs. J. Shackleton, G. Volk — F.C.C., Grande Prairie and Fairview
 Mr. L. G. Montpetit — Alberta Wheat Pool, Grande Prairie

Graduation

Graduation exercises were held in the College Gymnasium on June 17th. Guest speaker was 1954 F.S.A. Graduate, Mr. A. Tosh, Officer-in-Charge, Experimental Farm, Fort Simpson, N.W.T. Rev. G. F. E. Wilkinson gave the Invocation and Evelyn Patton of Eureka River was Valedictorian. Mr. J. E. Hawker, Director of Alberta Agricultural and Vocational Colleges presented 28 diplomas and 11 certificates as follows:

	Diplomas	Certificates
Agriculture	23	—
Commercial	5	11

Scholarships and Prizes

Students Assistance Act Prizes (\$50.00 each) to Evelyn Patton, Eureka River; Allen Perkins, Debolt; Werner Sellin, Northmark; Robert Friesen, Crooked Creek; Harold Bratland, Hythe; and Judy Erickson, Girouxville.

Wheat Board Surplus Monies Trust Scholarship (\$100.00) to Wayne Davies of Dimsdale for achievement in past club work and work at 4-H Club Week.

Peace River Livestock Co-op Scholarship (\$50.00) to Larry Ramstad, Armstrong, B.C., for proficiency in Animal Science.

British American Oil Company Limited Scholarship (\$50.00 each) for proficiency in Farm Management to Larry Schur, Berwyn and Allen Perkins, Debolt.

Imperial Oil Company Limited Scholarship (\$100.00) for proficiency in Farm Mechanics to Herbert Kuenzl, Tomslake, B.C.

Alberta Pacific Grain Company Scholarship (\$100.00) for proficiency in Plant Science to Robert Friesen, Crooked Creek.

Dr. Irene Parlby (F.W.U.A.) Scholarship (\$50.00) for achievement to Susan Fedorowich of Manning.

United Grain Growers Scholarship (\$50.00) for general effort, progress and proficiency to John Lieverse, Beaverlodge and Keith Spry, Sexsmith.

Alberta Poultry Hatchery Association Scholarship (\$50.00) for a student outstanding in Agriculture, to Allen Perkins of Debolt.

U.F.A. Co-op (Robert Gardiner Memorial) Scholarship (\$50.00 each) for proficiency in General Agriculture to John Lieverse, Beaverlodge, and Daniel Lane of Bellroy.

W. P. Loggie Scholarship (\$100.00) for general proficiency to Robert Friesen of Crooked Creek.

Bursary Donors and Recipients

Several bursaries were presented at the Christmas Closing Banquet held December 15th. They were as follows:

Alberta Wheat Pool (Henry Wise Wood Memorial) (\$135.00 each) to Beverly Burton, North Pine, B.C. and Douglas Culshaw, Belloy.

Wheat Board Surplus Monies Trust (\$100.00 each) to Dwight Nicholls of Crooked Creek and Julien Gervais, McLennan.

Canadian Legion (Alberta Command) (\$100.00) to Allen Crichton, Hythe

Alberta Women's Institute (\$50.00) to Sandra DeWinter, Enilda.

Winnipeg Grain Exchange (\$100.00) to Stephen Werklund, Valleyview and Edward Kulicki, Sexsmith.

Kiss Farms Limited (\$100.00) to Robert Hicks, Dawson Creek, B.C.

Albright Memorial Bursaries (\$50.00 each) to Joyce Bulhofner, Northmark; Carol Schamehorn, Notikewin; and Larry Southwell, Goodfare.

Fairview Chamber of Commerce (\$100.00) to Eileen Bettenson, Berwyn.

F.U.A. District No. 1 Bursary (\$250.00) to David Hegland, Beaverlodge.

Summary of Courses and Attendance 1965 - 66

	Winter	Spring	Fall
Agriculture	61	N/O	68
Academic	30	31	31
Commercial	—	—	27 + 2 day
Motor Mechanics (Apprentice)	13* 9*	12	11
Welding (Apprentice)	—	11	9
Welding Short Course	9 & 7	7	—
Land Appraisal	—	6	—
TOTALS	129	67	148

* Denotes 2 second year courses

Extension and Publicity

Fairview College enjoyed an excellent relationship with all news media. Occasional items of interest appeared in newspapers, and on the radio and T.V.

The Principal and several staff members used the facilities of Dawson Creek's T.V. Station for several programs.

Radio station C.K.Y.L., in Peace River continued its offer to provide free time on its noon Farm Program. The College's contribution generally was concerned with activities of students and staff, and information about courses and events on the Campus.

The Principal and several instructional staff members visited and spoke at various High Schools and at several meetings of Peace River country organizations.

Fairs and 4-H Club Achievement Days also used the services of the Principal and many staff members on numerous occasions. Although personnel were asked to judge at these events, considerable publicity of a favourable nature accrued to Fairview College.

In addition to the guest lecturers and tour visitors listed in other sections, Fairview College hosted many individual visitors and small groups. Most were informal, but a few were official visits by representatives of various agencies and organizations. One group, consisting of Messrs. J. C. Jonason and M. Stewart of Edmonton, was gathering information regarding Alberta's edu-

cational facilities. Another group, representing A.R.D.A., consisted of Messrs. J. Kerns, S. G. Klumpf, and S. F. Shields of Edmonton, M. White of Regina, and D. R. Buchanan and W. T. Burns of Ottawa. Mr. S. E. Kenworthy, Deputy Minister of Public Works, and Mr. J. F. Hunt, Director of Design and Construction both visited the College, as did M.L.A.'s J. Horan, Jasper Place, E. E. Lee, Dunvegan, and the Minister of Education, the Honourable R. H. McKinnon.

Many small groups came for informal visits and tours. Visitors came from the United States, India, England, and many parts of Canada.

A distinct contribution to publicity was afforded on a few occasions by official attendance of a select group of students to functions such as the Grande Prairie and Fairview Bull Sales. A group of five students, with Farm Mechanics Instructor J. A. R. Palin, attended Progressive Farming Days at Olds College, where they were hospitably received.

Meetings, Tours and Other Events

College facilities were made available to many organizations during the past year. Staff and students were involved in a few of the events listed below.

	Attendance	Person Days
1 Farm Water School	70	70
1 Water Development Meeting	10	10
2 Crop Insurance Meetings	240	480
1 Northern Alberta Grazing Association Annual Meeting	45	45
1 Market Gardening Meeting	40	40
1 Concrete School	56	56
1 Beef Feeders' Meeting	22	22
1 Soil Testing Interpretation Meeting	10	10
1 Soils Short Course	16	16
5 Co-op Business Administration Meetings	75	375
3 Municipal Business Management Meetings	32	96
1 Horticulture Judging School	12	12
1 Sheep Field Day	25	25
1 Weed Control Meeting	24	24
1 Alberta Dairymen's Association Meeting	30	30
4 Poultry Council Meetings	41	164
1 Poultry Producers' Barbecue	130	130
1 F.W.U.A. Meeting	17	17
5 F.U. & C.D.A. Meetings	60	300
1 Community Development Symposium	137	137
2 Sewing Courses	35	70
1 4-H Public Speaking Finals	125	125
1 4-H Clothing Clubs' Rally	168	168
1 4-H Club Week	114	114
1 4-H Girls Clubs' Rally	170	170
2 4-H Club Tours	36	72
4 High School Students' Tours	174	696
1 Air Cadets' Tour	21	21
1 Senior Citizens' Tour	24	24
1 High School Counsellors' Visit	11	11
1 Visitors' Day	320	320
1 United Church Men's Conference	21	21
1 Alberta Association of Registered Nurses Conference	53	53
2 Minor Hockey Association Meetings	70	140
TOTAL Person Days		4,056

Grounds

Plantings in the early 1950's have shown considerable growth the past few years and caused many favourable comments by visitors. Low summer rainfall necessitated extensive watering of the lawns.

Maintenance and Construction

The Maintenance staff constructed four single garages for Campus staff. A cattle shed and hay shed were also constructed. One hay shed and the ten stall garage were moved in compliance with master planning in order to make room for new construction.

Three new staff houses, and double garages for each were constructed by contract.

A new Farm Shop and Machine Shed was erected by the Department of Public Works. This structure, as well as the houses mentioned above, were nearly completed by the end of the year.

The College Maintenance staff carried on their usual program of keeping buildings and facilities in good repair.

Farm

The year 1966 brought an increased number of visitors interested in the College livestock programs. Beef, sheep and swine management and facilities were the object of most questions.

New corrals for sorting and loading cattle were constructed. Additional facilities were added for sorting, weighing and handling the sheep flock.

Crop Yields, 1966:

	Acreage	Yields
Oat silage	15	75 tons
Oat Hay	21	50 tons
Mixed Hay	47	25 tons

Livestock Inventory

Kind	Breed	Number	Total
Beef Cattle	— Aberdeen Angus	44	
	— Shorthorn	1	
	— Charolais	1	
	— Feeder Steers	29	75
Dairy Cattle	— Holsteins	18	18
Sheep	— Cross-breds	99	
	— Suffolk	2	
	— Hampshire	1	102
Swine	— Yorkshire	190	
	— Lacombe	1	
	— Landrace	1	192
Poultry	— White Leghorn (Single Comb)	171	171

Farm Sales, 1966:

Livestock	\$18,461.76
Dairy Products	3,660.26
Poultry Products	1,187.67
Wool	181.50
Vegetables	740.45
TOTAL Sales	\$24,231.64

Instructional and Administrative Staff Changes

Mrs. M. J. Grove commenced January 1st, 1966 as Secretary.

Mrs. M. I. Readman commenced as Dean of Women in January replacing Miss M. Foster who resigned to be married.

Mrs. E. E. Wilson resigned as Dietitian and was replaced by Mrs. M. A. Wilkesman who commenced duties in April.

Mrs. I. Johnston commenced as Librarian on June 2nd, replacing Mrs. W. Bartlett who retired.

Mr. W. B. McNaught was appointed as Farm Mechanics Instructor in September, after transferring from N.A.I.T. He replaced Mr. E. E. Wilson who resigned to go farming.

Miss I. Lancot transferred to another Branch and was replaced in October by Miss E. L. A. Zajac.

Mr. L. J. Volk was appointed Instructor in Farm Structures on October 1st, 1966.

Mr. A. J. Gingras was appointed Dean of Men and commenced duties on November 1st, 1966, replacing J. S. Hladky, who transferred to another Branch.

Instructional and Administrative Staff, 1966

M. H. Jaque, B.Sc., M.Ed., P.Ag.	— Principal
M. Baranszky-Job, B.Sc.	— Horticulture
D. A. Fleming	— Recreational Director, Assistant Dean of Men
A. J. Gingras	— Dean of Men
Mrs. M. J. Grove	— Secretary
Miss D. M. Hoel	— Registrar
Mrs. I. Johnston	— Librarian
L. T. Jones, B.S.A.	— Animal Science
Mrs. B. L. Kuntz	— Commercial
J. T. Lancaster, B.Sc., P.Ag., Prof. Cert.	— Plant Science
R. E. Lloyd	— Accountant
Mrs. W. D. Mahood	— Nurse
H. E. McLachlan, B.Sc., P.Ag.	— Animal Science
J. A. McIntosh	— Farm Manager
W. B. McNaught, B.S.A., P.Ag.	— Agricultural Mechanics
J. H. Nichols	— Maintenance Supervisor
J. A. R. Palin, B.S.A., B.Ed., P.Ag., Prof. Cert.	— Agricultural Mechanics
H. E. G. Petersen	— Motor Mechanics
Mrs. M. I. Readman	— Dean of Women
J. P. Tait, B.Sc.(Agric.) Prof. Cert.	— Farm Management, Vocational Academics
L. J. Volk	— Farm Structures
J. H. Warne, B.Sc., B.Ed., P.Ag., Prof. Cert.	— Farm Management, Vocational Academics
L. M. Wendelboe	— Welding
Mrs. M. A. Wilkesman	— Dietitian, Assistant Dean of Women
Miss E. L. A. Zajac	— Stenographer
S. Zilke, B.A., B.Ed., B.S.A., M.Sc., P.Ag., Prof. Cert.	— Soils

Report of the Plant Industry Division

A. M. WILSON, B.A., B.Sc., M.Sc., P.Ag., Director
 O. G. BRATVOLD, B.Sc., P.Ag., Crop Improvement
 W. LOBAY, B.Sc., M.Sc., P.Ag., Weed Control
 A. W. GOETTEL, B.Sc., M.Sc., P.Ag., Soils
 J. B. GURBA, B.Sc., P.Ag., Crop Protection and Pest Control
 P. D. McCALLA, B.Sc., P.Ag., Horticulture

REPORT OF THE DIRECTOR

A. M. WILSON

The yield of wheat per acre at 29.2 bushels exceeded all previous records. Coarse grains were equally good. Crops in Southern Alberta including the traditional dry areas accounted largely for the overall record yields. Hail losses were heavy in the Taber-Bow Island districts. Crops from Red Deer north to Athabasca were also very good, and the Peace River area, except for I.D.'s 146 and 147, recovered remarkably from a very dry spring and early summer. Complete failure seemed evident in the North by early July. Fortunately with late rains and a long extended growing season near average crops were produced. Heavy frosts in mid-August did extensive damage in the Keg River-Fort Vermilion farming areas. Requests were received for emergency assistance and it appeared that Government aid was necessary to permit farmers to continue and develop their farming operations.

Northern areas experienced unfavorable harvest weather. The prolonged growing season and late harvest resulted in many crops being combined in late October and in some districts part of the crop remained unharvested. Thorough drying was not possible and much of the combined grain was tough or damp. To overcome this problem many grain dryers were purchased and it would appear that dryers are now becoming recognized as necessary farm equipment.

Rape seed which had increased to 735,000 acres in 1965 decreased to 610,000. Most of the reduction was in the Peace River and was due to dry conditions at planting time. The Peace acreage had accounted for 60% of the crop. Experience with rape seeded into dry soil and wind losses during the 1965 harvest brought about the reduction.

The following table gives the area, yield per acre and total production of the principle field crops for the years 1965 and 1966.

	Area		Yield per Acre		Production	
	1965 —'000	1966 ac.—	1965 —bu.—	1966	1965 —'000	1966 bu.—
Wheat	6,050	6,600	26.1	29.2	158,000	193,000
Oats	2,200	2,020	47.3	48.5	104,000	98,000
Barley	3,390	3,840	33.9	41.1	115,000	158,000
Fall rye	177	135	23.4	25.9	4,150	3,500
Spring rye	23	24	19.6	18.8	450	450
All rye	200	159	23.0	24.8	4,600	3,950

Flaxseed	414	334	13.8	15.9	5,700	5,300
Mixed grains	335	350	38.8	44.3	13,000	15,500
Peas, dry	8	10	26.9	23.9	215	251
Rapeseed	735	610	12.9	18.0	9,500	11,000
—cwt.—						
Potatoes	23	26	130.4	153.8	3,000	4,000
—lb.—						
Mustard Seed	96	90	774	900	74,350	81,000
Sunflower Seed	1.5	2	170	450	255	900
—tons—						
Tame hay	2,830	2,850	1.94	1.61	5,500	4,600
Sugar beets	39.1	38.6	13.04	13.01	510	502

Crop Insurance was extended to include the Municipalities of Peace, Fairview, Spirit River and the County of Grande Prairie except the three western ranges. An area was also added to include portions of the Municipal Districts of Kneehill, Mountain View and Rocky View, and each of the initial Ranfurly-Vermilion; Ponoka-Lacombe and Nobleford-Vulcan areas was extended. Regardless of above average crops throughout the province, 5.4% of the farmers insured collected indemnities from their insurance policies.

Hail losses were greatest in the heavy crop areas of Southern Alberta. Indemnities paid to insured exceeded premium income and Board reserves were required to meet insurance obligations. Total risk exceeded 36 million.

The Emergency Assistance Policy designed to provide relief to farmers in the Peace River District and in West-Central Alberta paid claims in the amount of \$2,384,411.50 to 5,217 farmers. 4,716 farmers in the North received \$2,213,736.00 and 501 in West-Central were paid \$170,675.50. Eligibility was based on crop yields over a 3-year period. When yields in terms of wheat averaged less than five bushels payments were \$3.00 per 1965 cultivated acre with a maximum of \$750.00. When yields were more than 5 and less than 10, the payment was \$2.50 per acre, and the maximum was \$600.00. The Government of Canada declined participation in the Policy.

During the year the Field Crops Branch was reorganized and renamed the Plant Industry Division. Five Branches were established within the Division, namely, Field Crops, Horticulture, Crop Protection, Weed Control and Soils. To each of these was assigned particular administrative responsibilities relating to Regional offices, the Horticultural Station, Brooks, and the Tree Nursery, Oliver, the Crop Clinic, Municipal Programs and the Soil and Feed Testing Laboratory. The Supervisor of Special Crops, Mr. Jorgenson, resigned to accept the position of General Manager of the Potato Commission. Mr. Goddard, Supervisor of Special Projects, including Seed Cleaning Plants, returned to the District Agriculturist Services. Vacancies in positions were advertised but appointments were not made. New positions were established in Regional Offices at Lethbridge and Fairview and the position at Lethbridge was filled by Mr. Ralph Trimmer and at Fairview by Mr. Robert Nelson.

FIELD CROPS BRANCH

O. G. BRATVOLD, P.Ag., Head

J. W. EDMUNDS, P.Ag., Supervisor of Apiculture

R. M. TRIMMER, P.Ag., Regional Crops and Soils Supervisor — Lethbridge

R. W. NELSON, P.Ag., Regional Crops and Soils Supervisor — Fairview

Reorganization of the Plant Industry Division late in 1966 brought into being the Field Crops Branch as a part of the Division, with responsibility for Cereal and Oilseed Crops, Forages, Seed Cleaning Plants, Apiculture and Regional Crops and Soils Supervisors. The Crop Improvement program of former years was continued as were the activities of the Apiculture section.

CROP IMPROVEMENT

Project D — Field Demonstrations, Crops and Fertilizers

Under this Project seed was supplied directly to District Agriculturists without cost for their use in demonstrating the value of improved varieties and fertilizer application. A total of 2,270 lb. of seed of many varieties was supplied.

Project G — New Variety or Species Demonstration Project

This project was used to introduce new varieties or species of forage crops and to demonstrate their value. A total of 950 lb. of seed was distributed. The kind of seed distributed was Chinook Orchard Grass and Pubescent Wheatgrass.

A.R.D.A. — Soil and Crop Management Project

Twenty-four local administrations, including Counties, Municipal Districts and Special Areas, allocated \$39,184.86 of local funds toward the program. Under the terms of the Project local administrations contributed 1/6 of the cost of the seed, with farmers paying 50% and the Provincial and Federal Governments equally sharing the balance.

Following is a summary of Federal and Provincial contributions paid out to Counties and Municipal Districts:

County of Athabasca	\$ 7,278.77
County of Barrhead	5,983.99
County of Forty Mile	811.91
County of Lacombe	3,589.64
County of Lac Ste Anne	3,333.33
County of Leduc	7,897.80
County of Paintearth	1,561.06
County of Ponoka	4,091.71
County of St. Paul	3,884.66
County of Smoky Lake	3,170.50
County of Thorhild	6,407.23
County of Two Hills	2,701.17
County of Vulcan	111.16
County of Warner	46.66
County of Wetaskiwin	3,224.29
Municipal District of Bonnyville	5,637.92
Municipal District of Lamont	7,557.65
Municipal District of Provost	662.98
Municipal District of Starland	46.67
Municipal District of Stony Plain	515.62
Municipal District of Westlock	5,559.64
Municipal District of Willow Creek	779.41
Special Areas 2 & 3	3,515.94
	\$78,369.71

Fifty per cent of the above amount was recovered from the Federal Government in accordance with the terms of the A.R.D.A. agreement.

Forage Seed Production

Total forage seed production declined despite increases in some kinds. Alsike production was less than half that of 1965, fescue was reduced by approximately four million pounds and brome by about one and a half million. Timothy showed a substantial gain of about 1.9 million. Price declines were recorded in fescue from an average of thirty cents per pound in 1965 to twenty cents per pound in 1966. Timothy prices dropped to approximately 8¢ per pound for certified grades. Strong prices were evident in kinds that were in short supply; these were Crested wheatgrass which brought growers in excess of thirty cent per pound, brome prices went up approximately fifteen cents and alfalfa from forty cent up depending on variety and grade. Export demand for red clover was weak.

The following table gives forage seed production of most kinds in the years 1962 to 1966 inclusive with preliminary estimates for 1966.

	1962	1963	1964	1965	1966
	— Thousand Pounds —				
Alfalfa	2,000	2,410	1,211	750	750
Sweet Clover	4,430	5,875	2,459	2,500	1,750
Red Clover	2,800	5,840	2,930	5,500	6,000
Alsike	7,700	9,730	5,671	15,000	7,000
Timothy	400	730	1,009	1,600	4,500
Crested Wheatgrass	480	425	581	750	485
Brome	4,000	4,760	5,807	4,400	3,000
Creeping Red Fescue	9,000	5,450	8,923	18,000	14,500
Russian Wild Rye	—	350	1,000	450	300
Kentucky Bluegrass	—	—	—	—	20

PRODUCTION OF PEDIGREE SEED

Cereals and Flax

The following table summarizes the estimated yields in bushels of cereals and flax inspected for registration and certification.

	1962	1963	1964	1965	1966
	— thousand bushels —				
Wheat	929	1,315	2,345	1,519	1,961
Oats	1,490	828	848	608	824
Barley	526	499	514	822	1,609
Flax	64	62	95	114	105

Forage Seed

The table below is a summary of reported acreage of grass and legume crops inspected for registration and certification.

	1962	1963	1964	1965	1966
Streambank Wheatgrass (Sodar)	—	18	18	18	328
Brome (Carlton)	18	17	108	135	548
(Fischer)	355	160	155	90	155
(Manchar)	—	—	—	—	45
(Redpatch)	—	—	—	16	88½
(Saratoga)	32	162	217	303	462
Creeping Red Fescue (Boreal)	—	—	—	—	2½
(Duraturf)	—	—	—	—	40
(Olds)	1,471	713	243	1,008	1,271
(Pennlawn)	—	—	—	287	496
Crested Wheatgrass (Fairway)	170	90	50	50	80
(Nordan)	1,317	762	823	819	1,108
(Summit)	463½	130	72	55	63
Intermediate Wheatgrass (Chief) ..	—	—	—	40	40
Meadow Fescue (Ensign)	—	—	—	11	60
(Mimer)	—	—	—	—	333
Birdsfoot Trefoil (Leo)	—	—	—	—	4
Timothy (Astra)	—	—	—	90	77
(Climax)	2,218	2,536	3,936	6,194	7,545
(Drummond)	—	—	—	—	663
Alfalfa (Beaver)	—	—	307	514	628½
(Ladak)	46	51	96	99	10
(Rambler)	907½	765	632	489	289
(Vernal)	225	264	186	96	317
Red Clover (Altaswede)	—	40	100	2	2
(Dollard)	—	—	—	—	25
(LaSalle)	364	529	243	212	77½
Alsike Clover (Aurora)	—	—	—	—	163
Kentucky Bluegrass (Merion)	157	40	72	45	89
Orchard Grass (Chinook)	317	205	127	175	155
Reed Canary Grass (Frontier)	—	—	—	4	4
White Clover (Ladino)	—	—	—	40	110
Perennial Rye Grass (Norlea)	—	18	13	248	235½
Russian Wild Rye (Sawki)	—	—	—	11	71

Distribution of Forage Seed

The Field Crops Branch co-operated with the Canadian Forage Seeds Project in the distribution of Breeder and Foundation seed. All Breeder seed was distributed on the basis of contract production for the sale of the crop as Foundation to the Canadian Forage Seeds Project.

The following quantities were distributed:

Breeder:

Boreal creeping red fescue	50 lb.
Climax timothy	50 lb.
Altaswede clover	60 lb.
Beaver alfalfa	80 lb.
Aurora alsike	10 lb.

Foundation:

Boreal creeping red fescue	150 lb.
Climax timothy	3,125 lb.
Sawki Russian wild rye	100 lb.
Beaver alfalfa	200 lb.
Rambler alfalfa	800 lb.
Leo birdsfoot trefoil	42 lb.
Redpatch brome	417 lb.

Alberta Cereal Advisory Committee

This committee received research data relative to cereal production. Changes were made in the bulletin "Varieties of Grain for Alberta" which provides agronomic information on most cereal varieties grown in the province.

Forage Crops Advisory Committee

This committee met in December to review research, extension and promotion of these crops. It recommended that the variety "Olds" creeping red fescue be discontinued and that breeder seed of this variety be no longer maintained.

The Seed Dealers Act

Twenty-three seed dealers were licensed under the Act.

The Agricultural Relief Advances Act

Assistance, by authority of the Agricultural Relief Advances Act in the purchase of seed, fuel and oil, was provided to 321 farmers throughout the Peace River areas. Total expenditure amounted to \$132,646.64.

The Royal Agricultural Winter Fair

The Department continued its policy of assisting exhibitors at the Royal Agricultural Winter Fair, Toronto. The Plant Industry Division assembled and shipped exhibits to the Show paying the shipping costs to Toronto. In addition to supervising the exhibits at the Show all prize monies won by Albertans at the Royal were increased by 50%. A special honorarium of \$25.00 was paid for each first prize in the classes for wheat, oats, barley, rye, flax, alfalfa, alsike, red clover, sweet clover, brome, fescue, timothy, crested wheatgrass, field beans, russet (netted gem) seed potatoes, potatoes in the Vegetable and Cooking classes and 4-H Club exhibits. Such honoraria was increased to \$100.00 for championships won with exhibits of wheat, oats, barley, rye, flax, forage seeds and potatoes.

The names of the 1966 winners at the Royal Winter Fair, Toronto, were as follows:

World Championships

Wheat (Chinook)	Larry C. Hixt	Beiseker
Barley (Compana)	Wallace Hummel	Milk River
Oats (Victory)	Tom Rhatigan	Edmonton
Potatoes (Seed)	T. Fujimoto & Sons	Rainier
Potatoes (Cooking)	E. J. & Pat Shimbashi	Barnwell

Championships

Winter Wheat	Geo. Luco	Lethbridge
Beans	Mrs. Glenn Waddle	Vauxhall

Reserve Championships

Wheat	Janet Thompson	Delia
Barley	Connie J. Greeno	Lethbridge
Flax	Harold E. Hanson	Vulcan
Beans	Mrs. Glenn Waddle	Vauxhall
Oats	Jeffrey C. Abbott	S. Edmonton
Potatoes (Netted Gems)	T. Fujimoto & Sons	Rainier

First Prizes

Wheat (Hard Red Winter)	Geo. Luco	Lethbridge
Durum Wheat (Stewart)	Russell W. Greeno	Lethbridge
Field Beans	Mrs. Glenn Waddle	Vauxhall
Beans	Mrs. Glenn Waddle	Vauxhall
Sweet Clover	Frank Rivard	Legal
Brome	Jacob Oster	Veteran
Creeping red fescue	Norman Liberty	Beaverlodge
Wheat (Sheaf)	Carl Brown	Rolling Hills
First-cut Hay (Grass)	W. C. Schaefer & Sons	Innisfail
Barley		
(6-rowed)	Andrew Giffen	Okotoks
Barley		
(6-rowed Pedigreed)	F. J. Kastelic	Sangudo
Wheat		
(Hard Red Spring Pedigreed)	George Luco	Lethbridge
Wheat	Janet Thompson	Delia
Potatoes		
(Netted Gem, Table Stock)	E. J. & Pat Shimbashi	Barnwell
Potatoes		
(Cooking)	E. J. & Pat Shimbashi	Barnwell
Potatoes		
(Red or Rose, Table Stock)	E. E. O'Donnell	Taber

Apiculture

The 1966 honey crop of 12.6 million pounds was less than $\frac{2}{3}$ of the 1965 crop. The reduction was attributed largely to adverse weather factors. Alberta remained the largest honey producing province in Canada. Colony numbers increased slightly to 114,500. There was also an increase in the number of beekeepers.

Markets remained firm with a fraction of a cent per pound increase in price. Due to some markets not developing to the extent anticipated some carryover of honey developed, but not of sufficient volume to create major concern.

Investigations

Populations of bees in many colonies were considerably below maximum. It appeared worse in some areas of southern Alberta, but many colonies in the North were also affected. An investigation of the problem in the South indicated the major causes to be nosema disease, skunks and lack of feed. Inclement weather predisposed colonies to nosema and adversely affected food supplies. Steps were taken to reduce the skunk populations in or near bee yards. Attempts were made to control nosema disease by the use of the antibiotic fumagillin. Results were inconclusive as check colonies improved considerably as well as the treated colonies. The significant advantage of prophylactic treatment of colonies in the early stages of nosema disease was obvious.

Tests were made to determine the affect of time and temperature on color of honey. Samples were heated to 170°F, 180°F, 190°F, 200°F, 209°F and held for 0 time, 1 hour, 4 hours, 8 hours and 16 hours. Results were photographed. Only slight discoloration resulted in the lowest temperature even at the 16 hour interval. Coloring significantly increased at the higher temperatures at all times above 0 time. At the 209°F temperature, the color ranged from white for 0 time to a deep red at the 16 hour period.

It is recognized that Alberta is among the best areas of the world for producing light colored, mild flavored honey. In view of the results obtained we may have to discourage use of certain equipment now employed in the extracting of honey to maintain these desirable characteristics.

An attempt to test the effectiveness of one of the tetracycline group of antibiotics for control of American foulbrood failed. Several inoculated colonies using frames containing American foulbrood scales failed to produce disease symptoms. There appeared to be a residual effect from treatment of the colony equipment with oxytetracycline the previous year. Credit for much of the work involved in these tests must go to Apiary Inspector W. McEwen of Ardrossan.

Observations were made on Alberta colonies being wintered in the Abbotsford area of British Columbia. The number of colonies being moved to British Columbia for wintering is increasing. It appears advantageous that colonies being wintered in British Columbia should be treated for control of nosema. One Alberta beekeeper who moved colonies into British Columbia in 1966 anticipates producing surplus package bees for sale.

The economics of producing package bees in California for Alberta beekeepers is of increased concern to our expanding industry.

Air-freighting package bees from California has increased. Beekeepers who used air-freighted packages believed the condition of the bees to be better than those hauled by other means.

Temperature control in trucks hauling packages continued to be a problem. Tests with false floors and with ventilation and water sprinkling systems appeared to improve the condition of the bees.

Disease Control

European foulbrood has not been a serious problem for several years. Nosema disease appeared to be the No. 1 problem. It is apparently endemic in colonies either through contamination of equipment or in varying levels of concentration in the bees. With satisfactory environment it appears to build up to epidemic proportions rapidly. Microscopic analysis is the only method of recognizing the infection, even here, there is uncertainty, since only the spore stage can be recognized. It is possible vegetative stages could be infective.

The number of colonies inspected in 1965 and 1966 was as follows:

	1965	1966
Number of colonies inspected	8,130	7,684
Number of apiaries inspected	510	914

Statistics

	*1965	**1966
Number of colonies	114,000	114,000
Number of beekeepers	1,320	1,150
Average yield per colony	176	110
Total honey production ('000 lb.)	20,050	12,540
Value of honey ('000 dollars)	3,008	1,936
Average price of honey per pound (bulk)	15c	15¼c
Average price of wax per pound	45c	47c

*Final

**Preliminary estimate.

Municipal Seed Cleaning Plants

Three new Plants were built in 1966. These were located at Forestburg, Edgerton and High Prairie, bringing the total to 59 plants in the province and part interest in one at Dawson Creek.

The Alberta Co-operative Seed Processors Limited held their Annual Convention at Edmonton during January.

Inquiries about the establishment of new plants were received from ten areas which do not have cleaning facilities. These were investigated as to feasibility and may result in the construction of one or two plants in 1967.

Total cost of the most recent plant built (High Prairie) was estimated at \$65,000.00 including cost of land acquisition.

Summary of seed handled during the past two seasons is as follows:

	1965-66	1964-65
Total Commercial Seed Cleaned	13,217,161	11,784,440
Total Pedigree Seed Cleaned	201,920	182,847
Total Seed Cleaned	13,419,081	11,967,287
Total Dockage Cleaned	1,311,002	796,774
Total Bushels Cleaned	14,730,083	12,764,061
Total Bushels Treated (Fungicide)	5,394,693	4,967,137
Total Bushels Treated (Insectide)	1,166,772	1,055,850
Average Number of Bushels Cleaned Per Plant	258,423	236,371

Regional Soils and Crops Supervisors

Regional Soils and Crops Supervisors were appointed at Lethbridge and Fairview during 1966. Mr. Ralph M. Trimmer, P.Ag., formerly District Agriculturist at Lethbridge was appointed to the south region effective May 15th with offices located at Lethbridge. Mr. R. W. Nelson, P.Ag., was appointed to the Peace Region effective May 15th with offices at Fairview. Mr. Nelson was formerly on the staff of the Fairview Agricultural and Vocational College.

The Regional Supervisors represent the Division of Plant Industry and co-ordinates Plant Industry programs on a regional basis. They are required to assist District Agriculturists in matters pertaining crop production, soil fertility and conservation, weed control, horticulture and crop pests and diseases.

During 1966 the Regional Supervisors devoted about 20% of their time to organization and supervision of Weed Control and Municipal programs. From 30 to 40% of their time was devoted to soil analysis interpretation and other soils problems, and the balance to matters relative to crop improvement, horticulture and general crop production.

WEED CONTROL BRANCH

General

A cool, dry spring in most areas in Alberta delayed weed growth and prevented farmers from obtaining good weed kills by cultivation. This condition also delayed the seeding of crops. In late spring, however, above normal rainfall (except Vegreville-Vermilion and Peace River areas) resulted in an excellent

crop and provided fair to good weed competition. As was the case in 1965, wet weather again hampered chemical spraying. Very little spraying was done by the week of June 11th except in Medicine Hat, Pincher Creek and Brooks areas. Spraying resumed after that time but some crops were too advanced.

Wild oat growth was the heaviest in years. Germination started early and continued well into late spring making delayed seeding an ineffective control measure. Most dealers exhausted their supply of chemical wild oat killers.

Rains delayed harvesting in the fall but this was followed by a long period of warm, dry weather. This combination resulted in heavy weed growth and encouraged fall tillage operations. Much extension work was done stressing the use of chemicals in lieu of tillage and this practice is beginning to increase in the southern regions where winter annuals, flix weed and stinkweed are problems. Many farmers also applied herbicides after harvest for thistle control.

Weed Surveys

(a) Survey of the Prairie Provinces

The Research Station at Regina which started the survey in 1964 completed the map work and made it available to the province. Copies were distributed to all Extension staff and Municipal Agricultural Fieldmen in Alberta.

This Branch assisted in the survey by providing data on the incidence of weed infestations.

(b) Five Persistent Perennial Weeds

Survey reports from the Agricultural Service Boards indicate the following infestations as recorded by the weed inspection force:

Weed	1965		1966		Some Areas Showing Heavy Infestations
	Farms	Acres	Farms	Acres	
Hoary Cress	392	5,661	489	6,697	Lethbridge, Cardston, Pincher Creek.
Russian Knapweed	100	680	97	699	Lethbridge, Taber, Claresholm.
Field Bindweed	490	5,710	506	5,682	Lethbridge, Warner, Cardston.
Leafy Spurge	234	4,474	221	4,347	Cardston, Provost, Pincher Creek.
Toadflax	6,889	77,255	7,896	83,954	Throughout Province.

Although the known infested areas have been held in check, Toadflax made some gains again this year. A significant number of new (but small) patches were located. Sodium Chlorate and borate-chlorate compounds were used extensively. Herbicides commercially known as "Fenac" and "Tordon" were used for the first time in fairly large quantities, particularly for the control of Toadflax patches.

Other Weeds of Increasing Importance

Field Scabious (*Scabiosa arvensis*) has now been reported and identified in a number of areas in central and northern Alberta. It is not a problem in cultivated fields.

Bassia (five hooked) (**Bassia hyssopifolia**) has been identified in the Brooks and other areas in southern Alberta. It is often easily mistaken for kochia, a very similar plant.

Smartweed (**Polygonum sp.**) wild buckwheat (**Polygonum convulvulus**), and tartary buckwheat (**Fagopyrum tataricum**) are increasing as weeds susceptible to 2,4-D are removed by spraying. Dicamba, bromoxynil and dichloroprop showed increased use to control these weeds.

Corn Spurry (**Spergula arvensis**) has been reported from a number of areas of central Alberta.

Green Foxtail (**Setaria viridis**) is on the increase particularly in east-central areas.

Darnel (**Lolium persicum**) was located in a number of fields in the Peace River area. It was quite serious in thinner crops.

Hawksbeard (**Crepis tectorum**) continued to spread and is causing concern particularly in the north-central parts of the Province. It has also made an appearance in the Peace River Block.

Night-flowering Catchfly (**Silene noctiflora**) has increased in a number of areas in the Province.

Weed Inspection and Enforcement

(a) Agricultural Fieldmen in Municipalities

There were 55 permanent Agricultural Fieldmen, 11 full-time assistants, and 78 part-time Inspectors in Municipal Districts, Counties, and Improvement Districts where Service Boards are organized. As a result of an ARDA Land Reclamation Project including eradication of perennial weeds, weed control programs in the Municipalities have been expanded.

(b) Weed Inspection in Improvement Districts

There were 11 Weed Inspectors working in Improvement Districts during the summer months in areas where there were no Service Boards.

(c) Weed Inspectors in Cities, Towns and Villages

All urban municipalities were reminded to appoint Weed Inspectors. One hundred and seventy Inspectors were appointed, mostly on a part-time basis. Co-operation between rural and urban Inspectors was very good. The Supervisor from this Branch attended a number of urban Council meetings to help set up a practical weed control program.

A special meeting of urban weed inspectors was organized at Calgary with this Branch participating.

(d) Regional Soils and Crops Supervisors

Two permanent Regional Plant Industry Supervisors were appointed this year located at Fairview and Lethbridge. Part

of their work involved the setting up of weed control programs on the regional level and assisting Municipal Agricultural Fieldmen in carrying them out. They also assisted Improvement District and urban Weed Inspectors with their work and did considerable amount of weed control extension in their regions.

(e) Official Notices Issued under the Noxious Weeds Act

The following table shows the number of official notices served by weed authorities to rural land owners in Municipalities (1962-65 records are listed for comparison purposes.)

Year	No. Notices to Destroy Weeds	Acres Affected	No. Notices to Prohibit Seeding	Acres Affected	No. Notices Prohibiting Threshing	No Court Cases
1962	2,174	48,826	497	19,954	10	9
1963	2,145	41,859	617	25,394	8	11
1964	1,759	35,992	624	24,701	5	10
1965	1,664	43,274	567	20,880	5	3
1966	1,373	38,655	598	15,110	4	3

About 2,000 farmers were served official notices; it is noteworthy that over 1,5000 acres of cultivated land was prohibited to be seeded due to serious weed infestation where proper action was not taken.

(f) Legislation

(i) Noxious Weeds Act

The following major amendments were made to the Noxious Weeds Act.

1. Wild buckwheat (*Polygonum convulvulus*), narrow-leaved hawksbeard (*Crepis tectorum*), green foxtail (*Setaria viridis*), kochia (*Kochia scoparia*) except the ornamental type, scentless mayweed (*Matricaria* var. *agrestis*), and smartweed (*Polygonum lapathifolium*, *P. persicaria* and *P. Scabrum*) have been added to the list of Class B noxious weeds in Alberta.

2. The local Weed Inspector was granted permission to destroy up to 10 acres of weed infested crop without having to obtain authority from the Director of the Plant Industry Division to do so.

3. The Municipal Agricultural Fieldman has been granted the authority to issue permits to Seed Cleaning Plants in his Municipality.

4. A Municipality may by by-law prohibit the operation of a vehicle carrying any material (grain) infested with weed seeds unless such vehicle is properly covered by a tarpaulin or similar cover to prevent the scattering of the material.

5. Fines for violating the various provisions of the Act have been significantly increased.

Chemical Weed Control

(a) Selective Herbicides

There were 6,436,000 acres or about 50% of cereal crops treated for broadleaf weed control with 2,4-D, MCPA and related compounds. This was about 40,000 acres more than last

year, but still well below the 1964 acreage treated. Adverse weather conditions during the spray period for the second year in succession kept the sprayed acreage low.

2,4-D and related compounds were the main herbicides used. Ester formulations continued to take the lead with low volatile esters and amine formulations increasing. Dichloroprop (Estoprop), dicamba (Banvel 3) and bromoxynil (Buctril M) were used to a limited extent where buckwheat (wild and tartary) and smartweed were serious problems. The higher cost of the newer herbicides as compared to 2,4-D is still an important influence in holding down their rate of adoption.

TCA use was increased over last year for green foxtail control although the acreage treated was small.

Diallate (Avadex), triallate (Avadex BW), and barban (Carbyne) have been well accepted by the farmers and used quite extensively. Dealers and agents ran out of supplies during the peak of season use.

There were 24,191 miles of weeds and 3,979 miles of brush sprayed along roadsides. Also about 2,500 miles of irrigation ditches were treated for weeds and brush.

The number of Agricultural Service Boards selling selective herbicides to farmers continued to decrease. There were, however, 16 Boards out of 56 still handling these herbicides.

(b) Soil Sterilants (in Municipal Weed Control Programs)

A number of soil sterilants were again handled by the Branch in carload lots and sold to Municipalities at cost less the assistance provided in the various programs. For elimination of patches of perennials on roadsides the Department shared equally the cost with the Municipality. On private land, the farmer paid only one-third of the cost of the chemical.

The kind and amount of sterilants used during the last few years is as shown below:

STERILANTS	lb. 1961	lb. 1962	lb. 1963	lb. 1964	lb. 1965	lb. 1966
Sodium Chlorate	254,688	225,232	185,284	215,264	234,976	250,208
D Bor Granular	94,200	129,350	140,450	140,500	136,400	102,200
Polybor Chlorate	88,403	73,930	92,665	72,460	58,020	26,270
Conc. Borascu	11,700	17,800	—	—	—	—
Benzabor	2,000	6,825	3,375	1,800	1,475	1,400
Monobor Chlorate	—	—	—	—	37,500	22,400
Monobor Chlorate D	—	—	—	—	—	3,350
Borolin	—	—	—	—	—	11,350
Picloram (Tordon 22K) ...	—	—	—	—	—	40 gal.

(c) Spray Equipment

Estimate number of farm-owned weed sprayers in Alberta is 25,000. To promote proper and safe sprayer use, 5 field days and other meetings were held in June with an average attendance of 25 farmers.

Weed Control Trials and Demonstrations

Weed control demonstration plots are considered as one good method of weed control extension work. This year there

were 125 such demonstrations set up, using registered herbicides. The majority of these demonstrated the performance of dichloroprop, dicamba and bromoxynil for buckwheat and smartweed control in crops. Demonstrations using soil sterilants included the use of trichlorophenylacetic acid (Fenac) and picloram (Tordon).

Assistance was given in a number of cases to Agricultural Fieldmen in setting out the trials. Work on other trials with Allied Chemical Services, U.S. Borax Corporation, May & Baker, Dow Chemical and a number of other Companies with various herbicides on weeds of importance in Alberta continued in 1966.

Project 2 — Weed Control with Forage Crops

Under this Policy, the Department shared equally with the farmer the cost of forage seed for use on weedy areas. Seed for a maximum of 20 to 30 acres per farm was provided on application forms signed by local agricultural authority. There were 175 farmers who participated in this project this year, seeding 38,475 pounds of selected forage seed to combat weed problems.

Weed Control on Crown Lands

Agricultural Fieldmen and particularly Improvement District Weed Inspectors investigated and took action on many weed problems on Crown land. Some land was leased to adjoining land owners who were granted special lease concessions by the Department of Lands. In three cases, expenses incurred in controlling weeds were paid by the Department of Agriculture, the same subject to recovery should the land be sold.

A special program was set up at Miquelon Lake with the University of Alberta, Plant Science Department laying out a whole series of plots to determine what type of forage might be established on the lakeshore. Aircraft spraying was also undertaken to determine:

1. the degree of Canada and Sow thistle control that can be accomplished with one spraying, and
2. the extent of spray drift.

Information obtained from this test would be most valuable as it would serve as a guide in handling weed control on lakeshores. The work is supported by the Agricultural Research Trust Fund and is continuing.

Roadside Seeding, Mowing and Spraying (Weed Control)

(a) Municipal Roads

Many Municipalities have adopted the policy of backsloping and seeding roadsides to suitable grass mixture as a weed control measure. The extent of this undertaking is shown on the table below:

	1962	1963	1964	1965	1966
Miles of roads backsloped	2,913	2,587	2,770	2,883	2,371
Miles of roads seeded	2,914	3,021	2,915	2,880	2,385

Under the Agricultural Service Board Roadside Seeding Program the Department supplied 66,600 pounds of seed to Municipalities as a grant. The maximum amount per Municipality was 1,200 pounds of seed.

There were 24,752 miles of roadsides mowed, and 24,191 miles sprayed.

(b) Government Highways

The Department of Highways has assumed all seeding of highway roadsides, and has undertaken the spraying of weeds on the right-of-way.

Alberta Weed Advisory Committee

The eighth (8th) meeting of the Committee was held December 12th about a week following the National Weed Committee meetings at Regina. The Alberta Committee accepted the report and recommendations of the National Weed Committee with the following conditions:

(a) With regard to toadflax control

More attention should be given to methods, emphasizing prevention, of establishment from seeds.

(b) With regard to fall application of herbicides for control of wild oats

Fall tillage necessary to remove trash to facilitate incorporation and action of wild oat herbicides such as triallate should, in the interests of land conservation, be discouraged.

(c) With regard to Picloram mixtures for control of broadleaf weeds in grain crops

At the present time the use in which mixtures may deserve preference is for control of wild buckwheat in oats and barley rather than for general weed control recommendations for all grain crops.

A sub-committee on weed control in specialty crops in southern Alberta met twice during the year to consider recommendations for use of herbicides in these crops. A bulletin on this subject was prepared ready for printing.

The committee recommended to the Alberta Agricultural Co-ordinating Committee (A.A.C.C.) the following major items:

1. That more information on chemical weed control in shelterbelts is needed and that some work should be undertaken to overcome this problem.

2. That Toadflax along the banks of Bow River is causing much concern to Municipalities involved and a survey is suggested to find out if the seed from this source is spreading into adjoining cultivated fields by irrigation water.

Agricultural Service Boards

An Agricultural Service Board was organized in I.D. 146 with the Fieldman from I.D. 138 doing the work here. He was assisted by a part-time Weed Inspector during the summer. This now makes 56 Service Boards operative in Alberta.

Practically all of the weed work in Municipalities was carried through the Service Board. Provincial weed work and related activities, regulatory and educational, were closely associated with the Boards.

Upon the recommendation of the Boards, there were 76 quarter sections of land placed under supervision with 271 held under supervision from previous years. Twenty-one quarters were released from supervision. There were also 6 quarters placed under reclamation, 17 were continued under this control and no parcels were released in 1966.

The Agricultural Service Boards held 190 Field Days and 38 Tours on weed control and related items. This Branch took part in 18 of them.

The ARDA Land Reclamation Project was fully utilized again this year through the Agricultural Service Board Agreement with each Municipality. It provided greater opportunity to expand weed control programs. The Project was outlined in the 1964 Annual Report (see page 19).

Miscellaneous Activities

Early in the year a series of short radio talks were given on new herbicides. Five to six minute talks were continued during spring and summer months on timely topics, totalling 20 in number.

Five television shows were made covering weed control of fields, gardens and aquatic weed control. One interview covered the residue question involving herbicides.

There were 25 press releases for the weekly provincial publication "Farm Notes".

The leaflet "Chemical Weed Control in Field Crops — 1966" was revised and printed with 15,000 copies distributed. Other pamphlets printed were "The Control of Green Foxtail" and "Narrow-leaved Hawksbeard". Up-to-date releases (16) on herbicides were issued from time to time to the field staff.

The Supervisor of Weed Control spoke at 24 Short Courses and Special Weed Control Meetings and Workshops.

Agricultural Chemical Schools were again organized and conducted for dealers, agents and farmers in the various regions. The Schools were held at Lethbridge, Fort Macleod, Provost, Grande Prairie and Willingdon, with a total attendance of about 500. There were an additional 62 dealer meetings held by Agricultural Fieldmen.

This Branch assisted with the arrangement and took part in regional Service Board Conferences at Lethbridge, Rocky Mountain House, Castor, Two Hills and Morinville.

A special Weed Control Workshop was held at Wetaskiwin, Fairview and Coronation for Agricultural Fieldmen, District Agriculturists and Weed Inspectors. Extension and regulatory aspects of weed control was the main theme. Actual weed problem cases were worked out.

A 4-day Weed Tour was held in the Peace River area with Service Board personnel and the Trade participating.

REPORT OF THE SOILS BRANCH

A. W. GOETTEL, Supervisor of Soils

D. H. LAVERTY, B.Sc., M.Sc., P.Ag., Supervisor Soil and Feed Testing

J. A. CARSON, B.Sc., M.Sc., P.Ag., Laboratory Supervisor

General

Farm land in Alberta was less affected by wind or water erosion than in the two previous years. Weather conditions played an important role in this reduction, however, farmers too were more aware of the need of soil protection. Agricultural Service Boards have made wider use of legislation affecting control. Our annual survey indicated that some 380 quarters of land were affected by winds compared with approximately 700 in 1965 and over 2,000 in 1964. Water erosion damage was noted on 1,544 quarters compared to approximately 2,200 in 1965. Demonstrations on gully filling and other conservation practices were conducted by 25 Agricultural Service Boards on 109 farms. In addition, 19 soil conservation displays were set up at Fairs, Field Days, Short Courses, etc.

Administration

Administration, extension and legislation respecting soil and soil conservation was conducted by the Soils Branch under the reorganized Plant Industry Division. The administration and operation of the Agricultural Soil and Feed Testing Laboratory was somewhat changed during the year. An interim supervisory committee was named to be responsible for the operation of Laboratory until the new Laboratory is built. The appointment of the new committee has been accomplished by a partial transfer of supervisory duties from the University of Alberta to the Department. Numerous meetings of the Committee were held during the year. A new policy and fee schedule for soil and feed testing was drawn up for introduction in 1967.

The Supervisor attended the National Soil Fertility Committee meeting in Ottawa in January. Committees were established to co-ordinate soil testing research and to prepare a brief on proposed changes to the Canada Fertilizer Act respecting analyses of fertilizers. The Supervisor of Soils was a member of the latter Committee.

Soil Reclamation Project (Project 1)

	1961	1962	1963	1964	1965	1966
No. of demonstrations	264	307	216	303	304	238
No. of D.A. areas participating	27	27	32	25	23	23
Pounds forage seed supplied	66,178	66,272	70,130	68,705	61,165	47,170
Pounds fertilizer supplied ...	22,680	4,400	1,600	8,000	7,040	1,500
TOTAL acreage	6,316	6,800	7,000	6,900	6,080	4,760

Publications

No new publications were printed, however, Publication 541 — "Fertilizer Recommendations" was reprinted early in the year

and a complete revision was prepared during the year for publication in 1967. Numerous releases for staff use were printed on soil amendments and liquid fertilizers. The Supervisor assisted in revision of two sections on soils in the revised Farm Guide. Eleven releases were prepared for Farm Notes on fertilizers, gully filling, soil drifting, soil testing, etc.

Alberta Soils Advisory Committee

The Supervisor was Secretary to the Alberta Soils Advisory Committee. This Committee is advisory to the Minister through the Alberta Agricultural Co-ordinating Committee (A.A.C.C.). Items of concern to the Committee during the year were the need for research on soil testing methods and interpretations. The Committee prepared the annual compilation of soil and fertilizer test data from research conducted at the four Research Institutions in Alberta. The Committee held a five day tour of soils research projects and conducted a survey of fertilizer sales on a Municipal District or County basis.

Legislation

The Soil Conservation Act (1962) was administered by this Branch. There were five notices issued compared with three in the previous year. Two Municipalities passed by-laws under this Act during 1966. A total of nineteen Municipalities now have by-laws controlling top soil removal, under which thirty-four permits were issued. Eighteen Municipalities have by-laws controlling the burning of stubble and straw under which 644 permits were issued by eleven Soil Conservation Officers.

The first Court case involving the Soil Conservation Act was recorded during the year. Three farmers were fined for burning straw without a permit issued pursuant to a County by-law established under this Act.

Extension

This Branch in conjunction with the Extension Service took part in nine Short Courses, 45 Farmers' Meetings and one Dairy Field Day. Topics discussed were soil management, land clearing, fertilizer use, conservation and soil testing. Total attendance at these meetings was over 1,200. There were increasing demands for information on fertilizer use. Personnel from the Soil and Feed Testing Laboratory also assisted with farm meetings. A one-day School on the control of soil drifting was held at Lethbridge. Six television appearances were made and numerous radio talks were prepared on timely topics relating to soil management and fertility. The Supervisor arranged the field trips and lectures for the Soil Section of the first 4-H Conservation Camp held at Hinton, Alberta.

A soil coring machine was purchased and was used to conduct a fall survey of available soil nitrogen on stubble and fallow fields in 16 District Agriculturists' districts. Information from this

survey was used in making soil test laboratory interpretations. Approximately two and one-half weeks were spent at the Laboratory on soil test interpretations. Four regional meetings with District Agriculturists were organized and designed to acquaint District Agriculturists with soil testing methods and interpretations.

Fertilizer use increased again this year. The amounts sold in Alberta in the past seven years are shown below:

	1960	1961	1962	1963	1964	1965	1966
Tons	79,011	104,077	126,865	170,447	224,183	252,188	316,113

There were more than 130 fertilizer demonstrations conducted in 25 Municipalities. Sixty demonstration plots were harvested and about 1,500 samples were threshed and yields determined. The results were returned to the respective district and they were also included in the compilation of data for the Soils Advisory Committee. Numerous demonstration plots were established using fertilizers based on soil requirements determined by soil analysis.

Agricultural Soil and Feed Testing Laboratory

The partial re-organization of the Laboratory resulted in the employment of Mr. P. J. Martin, Animal Nutritionist, and Mr. J. A. Carson, Laboratory Supervisor. Mr. Martin is a member of the Animal Industry Division and is responsible for ration interpretation based on feed analysis. A report on this work is included in the Animal Industry Division Report. Mr. Carson is a member of the Laboratory staff responsible for soil and feed analysis and Laboratory operation. The Laboratory staff consists of eight permanent employees and four part-time assistants.

A total of 16,912 soil samples were analyzed for Alberta farmers, gardeners and greenhouse operators. This is an increase of 6,839 samples or 68% over 1965. In addition, the Laboratory analyzed 2,400 samples in co-operative studies with local District Agriculturists and Research Institutions to: diagnose local problems, and to obtain background information on Alberta soils and feeds. The following table shows the number of samples handled during the last six years:

	1961	1962	1963	1964	1965	1966
No. of Samples	3,794	5,634	8,484	10,254	10,073	16,912

Some delays in returning the results to farmers were experienced due to the large number of samples received during the last quarter of the year. Laboratory space and facilities are also limited and delays will likely continue until the new Laboratory becomes available.

The following tables show the number of soil and feed samples received and the reports and recommendations made by the Laboratory.

QUARTER	Feed	Farm Soil	Garden Soil	Greenhouse Soil	Total for Quarter
Jan. 1 — Mar. 31	520	1,662	32	176	2,390
Apr. 1 — June 30	79	1,084	241	143	1,547
July 1 — Sept. 30	200	660	210	126	1,196
Oct. 1 — Dec. 31	731	10,784	100	164	11,779
TOTALS for the year	1,530	14,190	583	609	16,912

BREAKDOWN OF FEED SAMPLES

Quarter	Grains	Hays	Silage	Special Analyses*	Total for Quarter
Jan. 1 — Mar. 31	93	295	111	271	770
Apr. 1 — June 30	18	42	19	35	114
July 1 — Sept. 30	36	128	9	98	271
Oct. 1 — Dec. 31	298	290	111	269**	968
TOTAL for the year	445	755	250	673	2,123

*Nitrate, Carotene, Prussic Acid

**Many of the feed samples received were for regular and special analyses. Each analysis was recorded. This accounts for the greater number of samples analyzed.

REPORT AND RECOMMENDATIONS ISSUED TO FARMERS

January 1, 1966 — December 31, 1966

Quarter	Feed	Farm Soil	Garden Soil	Greenhouse Soil	Total for Quarter
Jan. 1 — Mar. 31	228	434	24	51	797
Apr. 1 — June 30	44	384	174	45	647
July 1 — Sept. 30	97	191	124	36	448
Oct. 1 — Dec. 31	310	2,483	81	47	2,921
	739	3,492	403	179	4,812
Average number of samples per report	2.1	4.1	1.4	3.4	3.5

CROP PROTECTION AND PEST CONTROL BRANCH

J. B. GURBA, Supervisor

L. K. PETERSON, B.Sc., M.Sc., P.Ag., Entomologist

D. STELFOX, B.Sc., M.Sc., P.Ag., Supervisor, Crop Clinic

Crop Pests

Grasshoppers

The grasshopper infestation decreased in southern Alberta, to $\frac{1}{2}$ of the 1965 infested area. Of the 4.3 million acres in the infested area, 3.9 million acres were rated as "light" and 0.4 million acres were rated as "moderate". The migratory species was prevalent through most of the area with patches of the two-striped species. The clearwinged species disappeared almost completely. Scattered, low infestations were found elsewhere in the province.

The accompanying map shows the approximate areas and degrees of infestation. Because of the late spring, hatching was delayed. Later, heavy roadside vegetation combined with slow 'hopper growth, limited movement and thus reduced damage to the spring crops. Damage occurred in the fall especially on green, fall seeded crops which necessitated limited chemical use.

Under the grasshopper policy the Department distributed Dieldrin, Malathion, and Dimethoate insecticides at cost, less handling and shipping charges, through Municipal and District offices. Dieldrin was recommended for use on non-feed crops and limited for use on cereals to the shot-blade stage of growth. Dimethoate and Malathion were used on forage, pasture and livestock feed to prevent residue problems. Checks by Provincial and Municipal workers showed that farmers generally used these chemicals properly. Each purchaser of insecticide was required to sign a declaration that emphasized correct use and placed the responsibility for misuse on the applicator.

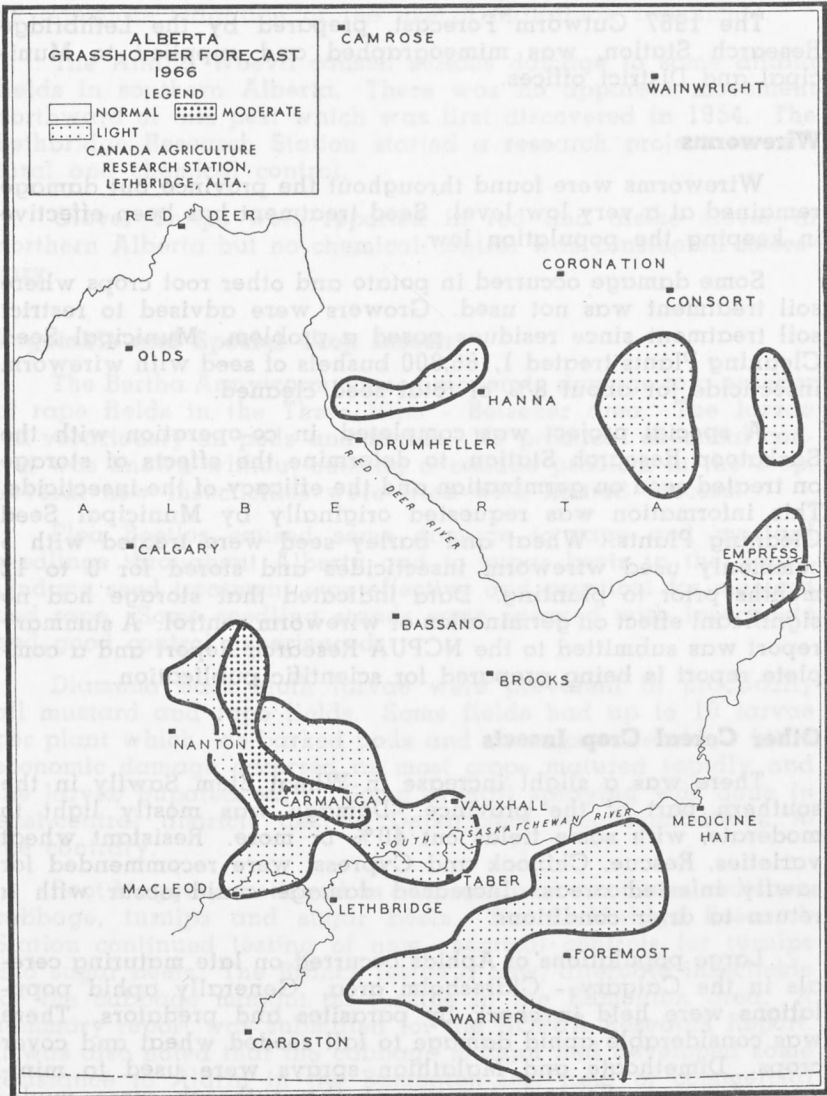
The grasshopper forecast, policy and map were printed and sent to Municipal and District offices and other interested agencies. Information on control was distributed through Publication 632-2 "Grasshopper Control in Alberta". Publication 632 "Control of Field Crop Insects — 1966" was revised for information on grasshoppers and other major crop pests, and several mimeographed sheets were circulated on timely topics.

The following table compares 1966 data on insecticides and size of infestation with that of 1963 - 65:

	1963	1964	1965	1966
Acres of Land Infested	19,700,000	16,000,000	10,800,000	4,300,000
Acres Crop Menaced	3,250,000	2,000,000	1,300,000	800,000
Acres Crop Destroyed	15,000	4,000	500	250
Lb. Technical Dieldrin Used ...	40,000	10,040	1,060	390
Lb. Technical Malathion Used	36,000	1,450	250	400
Lb. Technical Dimethoate Used	52,200	5,500	540	690
Acres Sprayed — Dieldrin	640,400	160,600	17,000	6,240
Acres Sprayed — Malathion ...	58,600	1,900	350	530
Acres Sprayed — Dimethoate	278,200	29,300	3,000	3,680

The 1967 grasshopper forecast received from the Lethbridge Research Station indicates an increase in the infested area

for the coming season. The size of the "light" infested area will be about the same as in 1966 but the "moderate" infestation should be about 3 times as great.



Cutworms

For the first time in almost 10 years, the Pale Western Cutworm caused no reported damage. Adverse weather during the egg laying period in the fall of 1965 and the generally good growing conditions last spring, kept damage to a minimum.

The Red-backed Cutworm occurred only in light and spotty infestations in the central and northern parts of the province. Any damage reported was confined to vegetable crops and gardens.

A Cutworm (*Polia sp.*) defoliated rape and an Armyworm damaged seedling flax in the Fort Vermilion area, but generally little damage occurred elsewhere. Dieldrin was used as spot treatments in one rape field. High residues resulted.

The 1967 Cutworm Forecast, prepared by the Lethbridge Research Station, was mimeographed and supplied to Municipal and District offices.

Wireworms

Wireworms were found throughout the province but damage remained at a very low level. Seed treatment has been effective in keeping the population low.

Some damage occurred in potato and other root crops where soil treatment was not used. Growers were advised to restrict soil treatment since residues posed a problem. Municipal Seed Cleaning Plants treated 1,166,800 bushels of seed with wireworm insecticide for about 8% of total seed cleaned.

A special project was completed, in co-operation with the Saskatoon Research Station, to determine the effects of storage on treated seed on germination and the efficacy of the insecticide. This information was requested originally by Municipal Seed Cleaning Plants. Wheat and barley seed were treated with 5 commonly used wireworm insecticides and stored for 0 to 12 months prior to planting. Data indicated that storage had no significant effect on germination or wireworm control. A summary report was submitted to the NCPUA Research Report and a complete report is being prepared for scientific publication.

Other Cereal Crop Insects

There was a slight increase in Wheat Stem Sawfly in the southern part of the province. Damage was mostly light to moderate, with some fields cut 40% or more. Resistant wheat varieties, Rescue, Chinook and Cypress, were recommended for sawfly infested areas. Increased damage could occur with a return to drier conditions.

Large populations of Aphids occurred on late maturing cereals in the Calgary - Claresholm area. Generally aphid populations were held in check by parasites and predators. There was considerable aphid damage to fall seeded wheat and cover crops. Dimethoate and Malathion sprays were used to minimize damage. Several surveys of the outbreak were made. Information was given by press and radio and a circular on aphids was distributed.

Forage Insects

Sweet Clover Weevil was found throughout the province. Local infestations were reported near Calgary and Berwyn. The Lethbridge Research Station continued a study on cultural and chemical control. Several short residual insecticides were cleared for control of weevil without the problem of residues remaining on forage.

The Pea Aphid caused damage to some alfalfa fields in southern Alberta. Research has shown that heavily infested alfalfa produced less hay, usually contained less carotene and was more susceptible to winter killing. Damage was reduced by adequate irrigation or the use of Malathion insecticide.

The Alfalfa Weevil caused serious damage to some alfalfa fields in southern Alberta. There was no apparent movement northward of this pest which was first discovered in 1954. The Lethbridge Research Station started a research project on cultural and chemical control.

Clover Thrips were reported in red and alsike clover in northern Alberta but no chemical control was considered necessary.

Vegetable and Special Crop Insects

The Bertha Armyworm caused moderate damage to a number of rape fields in the Three Hills - Beiseker area. The larvae fed voraciously on pods and leaves. No practical chemical control was known without causing a residue problem in the crop. Several new insecticides were tried with limited success.

Flea Beetles caused some damage to rape and mustard seedlings throughout Alberta and to sugar beets in the South. Lindane seed treatment was effective and practical for mustard and rape. Some seedling stands were sprayed with insecticide and good control experienced.

Diamond Back Moth larvae were prevalent in practically all mustard and rape fields. Some fields had up to 10 larvae per plant which de-barked pods and stems considerably. Little economic damage occurred as most crops matured rapidly and the larvae pupated early. Some aircraft spraying was done in east-central districts despite Department recommendations to the contrary.

Root Maggots continued as a serious pest on onions, radishes, cabbage, turnips and sugar beets. The Lethbridge Research Station continued testing of new chemical controls for turnips and sugar beets. The Branch tested a new, alternate insecticide for the cabbage maggot on turnips in the Edmonton area. A summary report was submitted for the NCPUA Research Report. It was also noted that the cabbage maggot had developed some resistance to Aldrin in the Edmonton test field of commercial turnips.

Colorado Potato Beetle was found in most potato fields and gardens in the Edmonton area for the fourth consecutive season and was prevalent in most irrigation district potatoes. It was readily controlled with insecticides.

Shelterbelt Insects

Forest Tent Caterpillars caused light to moderate defoliation in aspen poplar in scattered areas across northern Alberta. The outbreak has gradually decreased over the past few years.

Shelterbelts and ornamentals in urban areas, parks, resorts, and on farms, have been protected effectively with DDT sprays.

Pear Slugs were commonly found on cotoneaster, plum and mountain ash. They were readily controlled with Malathion and DDT. Tussock Moths were reported from elm and maple trees in the Calgary area. Some concern was expressed about the skin rash that apparently occurred when susceptible people handled the larvae.

Spruce Sawfly infested shelterbelts in central Alberta but generally at low levels. Spider Mites and Gall Aphids were common on spruce over a wide area from Spirit River to Taber. Aphids were common on shade trees and ornamentals. These pests were effectively controlled with recommended insecticides.

The Poplar Bud Gall Mite continued to be a problem on hybrid poplar in southern Alberta. Pruning of infected growing tips gave some control. Lilac Leaf Miners caused severe blotching of foliage on lilacs throughout the central region. Poplar Leaf Miner activity was spotty and only occasionally severe. Local outbreaks of the Fall Cankerworm caused some defoliation of fruit trees and ornamentals in the Brooks, Didsbury and Drumheller areas. Carpenter Ants and Wood Borers have become a common problem in poplars in urban and resort areas.

The Strawberry Root Weevil has been a common pest in homes for a number of years. During the last 2 seasons it has become a serious problem in several million spruce and pine seedlings at the Tree Nursery at Oliver. Dieldrin was used as a soil treatment for the 1966 transplants and appeared to give effective protection to the seedlings. The Federal Forest Research Laboratory in Calgary has been requested to assist with the weevil problem.

The Departments 50% Grant for purchasing insecticide sprayers was used by one Municipality in 1966. This brings the total number of these special sprayers to 22. There were 220 shelterbelts sprayed with Municipal and Department equipment. Publication 41 "Control of Insects on Ornamental Trees, Shrubs and Shelterbelts" was distributed for information on problem pests and control measures.

Other Insect Pests

Numerous problems occurred from stored grain pests such as the Rusty and Saw-toothed Grain Beetles, Carpet Beetles and Grain Mites. Information was supplied to farmers for stored grain problems and to householders where food or homes were infested. Garden Slugs were numerous and caused some damage in urban gardens under moist conditions. Sod Webworm infested lawns in urban areas of south-central Alberta. Numerous other insect pests of crops and gardens were identified in addition to those handled by the Crop Clinic. Publications on control methods and other information were supplied as requested.

Bird Problems

Blackbird damage to corn and sunflowers continued to be a problem in southern Alberta. The use of lure crops and scaring devices provided some relief where used. Co-operative testing of Avitrol bait with the Horticultural Station, the Lethbridge office, and the University of Alberta produced promising results from this method of blackbird and sparrow control in special crops. A Working Committee under the Pest Control Advisory Committee reviewed bird problems. A special meeting was held at Lethbridge and further research was considered necessary. Sparrows and starlings were frequently reported as pests in warehouses, feedlots and farm yards. Controls such as live trapping and roost repellents were tested. Information on available control methods was supplied for various bird problems.

CROP DISEASES

Diseases of Cereals

Covered Smuts and Root Rots of cereals generally remained at low levels. Common Root Rot appeared to be more severe on barley grown after rape or sweet clover, suggesting a possible toxicity factor involved. Loose Smut of barley was prevalent but less abundant, with the new Conquest variety showing good resistance. Wheat Streak Mosaic in the South was generally found at low levels for the second year.

The abundant moisture in Central and Southern districts provided ideal conditions for some diseases. A head blight due to Glume Blotch, and possibly Black Chaff, was common, especially in Park wheat. In the Calgary - High River area, Ergot infestations of wheat were severe. Considerable wheat was docked due to high Ergot content. Stem Rust and Leaf Rust of wheat were less prevalent than in 1965. Barley Leaf Diseases, especially Net Blotch and Scald, were common in Central and Northern areas, and reduced yields in some fields.

Timely articles were issued on seed treatment and cultural practices for disease control. Municipal Seed Cleaning Plants treated with fungicide 5,394,700 bushels or 40% of total seed cleaned compared to 4,967,100 bushels in 1965.

Diseases of Other Crops

Common Leaf Spot and Black Stem were widespread in alfalfa but not particularly damaging. The Downy Mildew-White Rust complex of rape and mustard was widespread and occasionally severe enough for economic loss in yields. Fire-blight of apples and mountain ash continued at the high level of the past few years in all areas except the Peace River Block. Fungicide sprays used at blossom time and pruning reduced damage but many trees were killed. Further coverage on diseases and special investigations is listed under the Crop Clinic section.

Diseases of Potatoes

(a) General

The annual field diseases survey was conducted in two stages for the second year. Early varieties were inspected during

the second week of August by 5 Provincial Inspectors. Municipal Inspectors from 5 co-operating southern Municipalities were trained in inspection techniques during this period, starting with a workshop meeting at Lethbridge. The final survey began on August 29th with six Provincial and 5 Municipal Inspectors employed.

Good weather and a generally mature crop made detection of diseases easier than usual. Blackleg and Rhizoctonia remained at the high levels of 1965, mainly due to moist conditions. Leaf Roll, Wilts and other virus diseases were generally low, except in urban areas where certified seed was not commonly used. Early Blight was common in trace to moderate amounts with some southern fields being treated. Late Blight was found in most districts and was especially severe in the Edmonton area, where many fields were sprayed or the vines were mechanically destroyed. Frost damage and rot from Late Blight caused considerable storage loss in the early winter.

(b) Bacterial Ringrot

The control program was continued in established Pest Areas. A joint Provincial-Municipal program was established on a test basis in 5 districts: Counties of Newell, Lethbridge and Forty Mile, M.D. of Taber, and I.D.'s 11 and 22. A grant schedule based on numbers of growers and potato acreage was tentatively agreed upon and 60% of the grant was paid for the last fiscal year. Municipal Agricultural Fieldmen were trained in control procedures. Work on field inspections and control measures on infected farms was shared on about a 50 - 50 basis during the first operating year.

The Bacterial Ringrot Directive for the 1965 crop specified that potatoes from infected fields must be sold by March 1, 1966, whereas stocks from non-infected fields on infected farms could be sold after March 1st, provided these were sprout inhibited. Growers generally co-operated well in proper storage, disposal and sprout inhibition. The latter technique was incorporated into the control program for the first time. It allowed for an extension of marketing and assurance that Ringrot infected stocks would not be used as seed at home or elsewhere.

On infected farms growers were required to use certified seed. One grower in the Edmonton area planted 80 acres with his own infected seed and also did not comply with an official notice to dispose of infected stocks by April. Court action was taken and the grower was found guilty and fined on two charges. The Department's high pressure sprayer working out of Edmonton disinfected 19 cellars plus equipment and machinery on 14 farms, in the Edmonton and Calgary areas. The 5 co-operating Municipalities in southern Alberta provided this service at cost in their districts. Many of the larger growers used sprayers and steam sterilizers for year-round disinfection.

Certified seed lists were supplied to all commercial growers. More certified seed was generally used than in 1965. Unfortunately Ringrot was found in one Edmonton seed source in mid-May when 12 farms had already planted from this source.

However, the use of good seed, closer supervision and better management, resulted in a generally improved Ringrot record.

The following tables show the crop situation and survey results, with 1962 - 65 data for comparison purposes:

Results of Ringrot Survey by Pest Areas for 1962 - 66

Pest Area	Year	No. Farms Inspected	No. Farms Infected	Acreage Inspected	Acreage Infected	% Infected	
						Farms	Acreage
*Lethbridge	1962	168	40	7,143	1,934	23.8	27.1
	1963	161	60	7,045	3,316	37.3	47.1
	1964	120	51	6,130	2,919	42.5	47.6
	1965	125	51	7,931	4,824	40.8	60.8
	1966	140	49	9,258	2,496	35.0	26.9
Calgary	1962	28	0	321	0	0.0	0.0
	1963	19	4	237	11	21.1	4.6
	1964	16	2	219	4	12.5	1.8
	1965	16	4	202	47	25.0	23.3
	1966	20	7	249	80	35.0	32.1
County of Newell (Brooks)	1962	36	5	2,270	220	13.9	9.7
	1963	35	7	2,477	260	20.0	10.5
	1964	35	11	2,461	337	31.4	13.7
	1965	38	11	2,896	367	28.9	12.7
	1966	48	11	3,782	390	22.9	10.3
Edmonton	1962	110	6	3,387	430	5.5	12.7
	1963	112	22	3,902	715	19.6	18.3
	1964	120	16	4,215	436	13.3	10.3
	1965	112	27	4,733	1,397	24.1	29.5
	1966	99	24	5,718	1,349	24.2	23.6
TOTAL	1962	342	51	13,121	2,584	14.9	19.7
	1963	326	93	13,597	4,302	28.5	31.6
	1964	291	80	13,025	3,696	27.5	28.3
	1965	291	93	15,762	6,635	32.0	42.1
	1966	307	91	19,007	4,315	29.6	22.7

*During 1966, the Lethbridge Pest Area was handled as five separate districts under the new-Department-Municipal Control Program, with the following results:

District	No. Farms Inspected	No. Farms Infected	Acreage Inspected	Acreage Infected	% Infected	
					Farms	Acreage
M.D. of Taber	57	27	7,095	1,911	47.4	26.9
County of Lethbridge	39	12	902	192	30.8	21.3
County of Forty Mile	12	4	862	368	33.3	42.7
I.D.'s 11 and 22	8	2	209	15	25.0	7.2
Perimeter Area	24	4	190	10	16.7	5.3
TOTAL	140	49	9,258	2,496	35.0	27.0

A total of 19,007 acres on 307 farms was inspected. Provincial Inspectors assisted Federal Officers with inspection of certified seed fields, with Ringrot found on 7 certified farms. The Crop Clinic diagnosed specimens from all inspection districts. The total number of infected farms decreased from 93 in 1965 to 91 and percentage decreased from 32.0 in 1965 to 29.6. The most significant change was the decrease of infected acreage from 42.1 in 1965 to 22.7.

The cooperation of 5 Municipalities in the control program resulted in considerable improvement in the irrigated districts e.g. infected acreage in the Lethbridge Pest Area decreased from

60.8 in 1965 to 26.9. The development of grower-packer organizations, such as Pak-Wel at Vauxhall, also contributed materially in improving disease control and quality production. The level of infection dropped appreciably with most positive fields showing trace to 1% levels. Control measures were discussed at grower meetings at Lethbridge, Vauxhall, Brooks and Edmonton. All growers with Ringrot infection were contacted by registered mail and by several personal interviews, to advise and assist with orderly crop disposal and control measures. Various publications and articles were distributed to growers. Activities were further coordinated by working with the Alberta Potato Growers' Association, the new Alberta Potato Commission, the Tuber Index Committee, the Potato Improvement Committee and Growers' Selling Agencies.

LIVESTOCK PESTS

Cattle Grubs and Lice

Livestock systemic insecticides used as a spray or pour-on treatment in the fall were more commonly used on beef cattle. Four field trials were run for evaluation of the new pour-on Neguvon. The pour-on technique increased in popularity because of its simplicity and continued to replace spraying. Several more districts organized larger control areas for more effective control of warbles and lice. Two districts planned the establishment of warble control areas where treatment of all cattle would be compulsory. Most Agricultural Service Boards provided sprayers for demonstration or service spraying or supervised spraying and pour-on operations in community projects. Some 80 demonstrations were carried out, plus service operations which involved 1920 herds with 209,500 cattle treated for grubs and lice. It was estimated that over 40% of the beef cattle population was treated, consisting mostly of younger animals.

Other Livestock Insect Pests

The black fly project in the Athabasca-Lac La Biche Area was expanded in cooperation with biologists of the Fish and Wildlife Division and the University Zoology Department. All streams in the area were surveyed, particularly the La Biche, Wandering and Pine Rivers, to define black fly breeding sites, and to record all forms of fish and other aquatic animal life. Adult black flies were collected throughout the summer from 15 farm cooperators, together with data on numbers, outbreaks, effect on cattle and people, weather conditions, etc. Department veterinarians investigated 2 cases of severely bitten bulls and other livestock. Larvicide treatments were conducted on 4 streams to evaluate the effectiveness of DDT and a new phosphate insecticide Abate, for control of black fly larvae, and possible effects on fish and other water life. During the winter a meeting was held with County of Athabasca authorities, and several planning sessions were held with cooperating biologists. Part of the extensive data collected have been analyzed and the rest will be done over

winter, to establish possibilities for practical but safe control operations.

The field trials on 4 farms with Shell backrubbers were continued. There was evidence that beef cattle in bush pastures did not utilize backrubbers for horn fly and stable fly control. Dairy cattle that came to the farm yard for milking made greater use of these self-application devices. During the winter, both beef and dairy animals made better use of the backrubbers, possibly due to greater confinement, and irritation from lice. Ronnel impregnated mineral was evaluated at 2 farms for horn fly and grub control. Warble control was considered adequate on adult animals but varied considerably in younger stock, likely correlated with the varied pattern of individual feeding on the mineral.

Information on various livestock insect pests was compiled and distributed. The Guide on Livestock Insect Pesticides, developed by the Western Committee on Livestock Pesticides, was compiled and distributed to all District and Municipal offices. Publication 651-1 "Dairy Pesticides — 1966" and Publication 651 "Control of Livestock Insects" were revised and distributed. Several Dairy Field Days were attended on insect control. A number of timely topics were prepared for radio, TV, the farm press and district offices.

Magpie Control

Few reports of magpie damage to livestock were received. Live-trapping or poisoning over winter provided control where needed. Control demonstrations with poison sets were conducted in 8 districts to train new Department or Municipal officials. All districts now have trained staff who can assist with individual problems. Several Municipalities conducted extensive winter control campaigns which were successful in greatly reducing magpie numbers. Publication 120 "Magpie Control in Alberta" and other information were supplied as requested. Agricultural Service Boards reported that 300 poison sets and live-traps were used, and an estimated 17,400 magpies were destroyed in winter control campaigns.

Coyote Control

The approved poisons-cyanide guns, strychnine and sodium fluoroacetate (compound 1080), were supplied free of charge to land owners in 87 approved Municipalities which cover the settled areas of the province. Strychnine was the main poison used. It was easier to train farmers in safe and effective strychnine use than for the more complex coyote getter gun. The latter were recalled where not in active use, along with deteriorated shells, in the interest of public and animal safety. The use of all poisons decreased, mainly due to the rapidly expanded use of power toboggans for hunting coyotes and the increased value of about \$12.00 for the average coyote pelt. Coyotes decreased in number in most districts.

The following table shows the amounts of major coyote control material supplied and estimated coyote kills by the 3 poisons used, with 1962-65 data for comparison purposes:

	Coyote Getters	Cyanide Cartridges	Scent (2 oz. jars)	Strychnine Pellets	Estimated Coyotes Killed
1962	230	1,780	1,050	53,000	28,800
1963	600	1,300	990	50,800	21,900
1964	340	1,130	575	38,800	21,900
1965	94	700	610	36,650	19,840
1966	210	570	310	28,550	13,310

In fringe areas of settlement, coyote and wolf control was continued in cooperation with the Department of Lands and Forests, which is responsible for predator control in the forest (green) area. Five pest control officers were employed during the winter in Improvement Districts without Agricultural Service Boards. During the summer 10 Weed Inspectors in I.D.'s handled coyote control along with regular duties.

The poison 1080 was used in sparsely settled areas to assist farmers where other control measures were not sufficient. Meat baits were injected with 1080 poison by Branch Fieldmen and set by Municipal officers. Under the cooperative program, the following districts used 1080 baits during the winter season:

District	No. Baits Set	District	No. Baits Set
Athabasca, County No. 12	9	Vermilion River, County No. 24	10
Cardston, M.D. No. 6	32	Wainwright, M.D. No. 61	1
Forty Mile, County No. 8	18	Warner, County No. 5	4
Kneehill, M.D. No. 48	12	Wheatland, County No. 16	14
Lac Ste. Anne, County No. 28	3	Willow Creek, M.D. No. 26	12
Leduc, County No. 25	1	I.D.'s 11 and 22	37
Lethbridge, County No. 26	6	I.D. No. 50	2
Newell, County No. 4	12	I.D.'s 58, 65, 68 and 69	15
Pincher Creek, M.D. No. 9	10	I.D. No. 102	10
Provost, M.D. No. 52	2	I.D. No. 107	1
Stony Plain, M.D. No. 84	2	I.D. No. 109	11
St. Paul, County No. 19	10	TOTAL 1080 Baits 1966	242
Taber, M.D. No. 14	8		

No new districts applied and the total remained at 80 districts which have been approved in the past as areas where 1080 could be set. A large number of districts shared baits and coordinated control programs on a regional basis. The following table shows the 1080 program for the last 5 years:

	1962	1963	1964	1965	1966
Number of 1080 Sets	573	368	448	402	242
Number Districts Using	59	47	52	47	28
Number Districts Approved	80	80	80	80	80

The Supervisor, his Assistant and 3 Fieldmen, working out of Edmonton and Lethbridge, serviced 28 districts with 242 baits. Four new Municipal Fieldmen were trained in poison control techniques and issued with Form B training certificates.

RODENT CONTROL

Pocket Gophers

The pocket gopher continued to damage forage, gardens and shelterbelts. Field tests were conducted for better control methods and more effective poison baits, especially for machine applica-

tion. A new phosphate poison, Gophacide, was tested and appeared promising as a replacement for strychnine. Several kinds of grain bait treated with strychnine or Gophacide gave up to 90% control of gophers with one application. Assistance was given to Alberta Government Telephones in work to solve the problem of gophers chewing underground cables. Seventeen Municipalities had machines available for mechanical bait application. These were rented to farmers for handling large area infestations. Publication 124 "Pocket Gophers" and printed information on control measures were supplied to urban and rural residents. The Canadian Wildlife Service continued its second year of a long-term study of the habits of the pocket gopher in the foothills region west of Nanton.

Other Field Rodents

The outbreak of field mice in the Edmonton area continued for the second year. Frequent complaints were received of damage to feed stacks, nursery stock and other material. A special circular "Mice and Their Control" was prepared and distributed. Bush rabbits remained scarce in most areas. Rabbit damage to ornamentals and shelterbelts remained low but there were reports of some severe jack rabbit damage to shelterbelts in southern Alberta.

The Branch continued cooperative work with the Forestry Division on control of the Columbian ground squirrel in the southern foothills. Centralized bait stations containing strychnine poisoned oats were found effective in poisoning Columbians over large areas. With rabies prevalent in skunks in Saskatchewan, action was continued to reduce skunks through Pest Control Officers along the east border. All of these officers were considered in the "high risk" category and received rabies immunization. Information was supplied on the control of the above rodents, prairie gophers, snakes, bats, etc. on the numerous inquiries received at the Crop Clinic and the Pest Control office.

Norway Rat Control Program

The extensive control program was continued in all parts of the province with particular emphasis on the east border. Alberta was kept free of rats for the fifteenth consecutive year. The following table shows the rat situation on December 31, 1966, with 1964-65 data for comparison purposes:

	Year	Verm. River County No. 24	Wainwright M.D. No. 61	Provost M.D. No. 52	Special Areas No. 2 and 3	Acadia M.D. No. 34	I.D.'s 11 and 22	I.D.'s 85 and 101	Totals
Premises Checked	1964	1,315	409	375	400	173	494	325	3,491
	1965	1,150	394	507	544	173	495	300	3,563
	1966	683	256	310	464	173	568	296	2,750
No. Infestations	1964	83	21	63	20	4	6	1	198
Exterminated	1965	68	6	23	19	1	4	0	121
	1966	35	6	29	115	12	8	6	211
No. Infestations	1964	8	1	7	0	1	1	0	18
Remaining Dec. 31	1965	0	0	0	0	0	0	0	0
	1966	0	0	0	3	0	1	0	4

A total of 215 premises were infested during the year as compared to 121 in 1965. All infestations except 4 were exterminated by the end of the year. The remaining 4 infestations were confined and action was underway to have them wiped out.

Generally good co-operation was experienced from residents, pest control officers and municipal and other agencies. The program of coordinating action with Saskatchewan Provincial and Municipal authorities was continued. Where cooperation was good, improved rat control resulted in both provinces. Poor programs on the Saskatchewan side showed up in Alberta by increased infestations around Llyodminster, in the Municipal Districts of Provost and Acadia, and in the Special Areas. One Notice was issued but no Court action was necessary to get control measures established.

In the main, rats were held along the 380 mile front from Montana to Cold Lake. Farther within the province, some rats invaded through transport facilities and shipping. A total of 105 reported suspected cases were investigated with 4 found positive. Some 250 Pest Control Officers were appointed by rural and urban Municipalities to handle local reports. The Department continued the 50% grant toward salaries and expenses of Officers in 6 east border districts. Two Provincial Officers worked closely with Municipal authorities and residents, and handled control in northern Improvement Districts.

Anticoagulant poison baits were supplied free of charge to residents in the east control area and for suspected cases elsewhere. The following quantities of bait were used: Warfarin Ready Mixed — 24,000 pounds and Water Soluble — 2,400 packages. Based on average rat populations and amounts of poison used, an estimated 34,000 rats were killed.

Educational displays and demonstrations were used at summer fairs, on TV, radio and other news media. Rat control films, colored slide series, mounted rat specimens and control materials were used and supplied for various meetings. The Supervisor spoke on rat control at the meeting of Sanitary Inspectors. A special instruction publication was prepared and distributed to all Officers. Newly appointed Officers were trained and supplied with information kits. Field testing was continued with Raticate and other new formulations and methods. Several articles were prepared for the press and Department publications. One article in the Canadian Press got world-wide coverage and resulted in a number of enquiries from abroad. Information on the Alberta program was supplied to various enquiries from as far as England, West Germany, India and Australia.

CROP CLINIC

The Clinic was operated by the Supervisor, one half-time Plant Pathologist, a Laboratory Technician and Stenographer. During the year the Supervisor and Plant Pathologist, attended 32 meetings, were involved in 9 special investigations, and undertook 28 field trips. Total specimens received at the Clinic increased about 50%, when compared with specimens examined

the previous year. Much of this increase was due to a 70% increase in submissions relating to horticultural disease. The following table lists the type and number of specimens received for diagnosis, identification and recommendations, as compared with 1965.

	Diseases		Insects		Plants		Misc.		Total	
	1965	1966	1965	1966	1965	1966	1965	1966	1965	1966
Cereals and Forage	123	203	29	42	—	—	—	—	152	245
Special Crops	19	14	6	15	—	—	—	—	25	29
Ornamentals	229	425	86	195	—	—	—	—	315	620
Shelterbelt	41	33	32	16	—	—	—	—	73	49
Vegetables	291	344	21	22	—	—	—	—	312	366
Fruits	87	139	30	23	—	—	—	—	117	162
Stored Products	1	1	2	1	—	—	—	—	3	2
Household	—	—	1	48	—	—	—	—	1	48
Miscellaneous	—	—	67	22	106	338	21	34	194	394
Weeds	—	—	—	—	156	130	—	—	156	130
TOTAL	791	1,159	274	384	262	468	21	34	1,348	2,045

Plant Identification

Non-weedy plants accounted for nearly 3/4 of all plant specimens examined. The included range grasses, forbes, shrubs, wild fruits, algae, mosses, lichens, and fungi. Among weed specimens identified, field chickweed was noticeably abundant, possibly due to unseasonably wet weather in late summer. Green smartweed also was reported more frequently than usual, as a field invader. Two **Malva** (Mellow) species and a **Glechoma** (Ground Ivy) species apparently made further inroads on lawns and under shrubbery. An increase was noted in samples of wormseed mustard causing hogs to reject feed. There was also an increase in the number of requests to identify molds involving roughage and associated with cattle and sheep feeding problems. (Insect and plant disease specimens are covered in the general sections or below.)

Special Investigations

A number of problems which came to the attention of the Clinic required considerable background investigation as well as special and time-consuming diagnostic techniques. A cross-section of some of these cases was as follows:—

a) Carrot Cup Rot: A three-year investigation into the cause of extensive breakdown of washed and bagged carrots in commercial cold storage revealed the major problem to lie in the sequential appearance of two soil-borne fungi, namely **Sclerotinia sclerotiorum** and **Candida krusei**. The disease, apparently had been unreported in scientific literature. An interim report from the Clinic outlined reasons for the type of damage caused by these micro-organisms, and suggested a possible means of prevention.

b) Black Crater of Carrots and Parsnips: A hard black pitting of these two stored vegetables, originally thought to be due to soil mineral deficiencies, was reproduced following the isolation of, and inoculation with, **Gliocladium aureum**, a soil-borne fungus. Further indications were that the condition might be forestalled by a change in fertilizer practice.

c) Discoloration of Stored Potatoes and Parsnips: An investigation into the results of deep piling and subsequent pressure-

bruising led to determining the cause of commercial losses through discoloration of processed potatoes. However, regarding parsnip browning the Clinic was not successful in isolating the cause, despite several months of work on selected samples. It appeared, as in the case of the discoloration of potatoes, that the problem was not pathological.

d) Bacterial Ring Rot: Extensive microscopy was involved in the examination of stained slides derived from potatoes lifted during the regular ring rot survey. In addition, staining techniques were applied to several healthy-looking tubers taken at random from commercial fields, in an effort to determine whether the bacteria causing ring rot may be present in healthy-looking stock.

e) Potato Scab: Tests were continued, in an effort to control the organism responsible for causing scab. Preliminary results indicated that there may be an economical and effective rate of elemental sulfur which can be applied to some soils to prevent this fungal disease.

f) Crown Rot of Elder: A soil-borne fungus of the *Phytophthora* genus was shown to be the cause of this previously unreported disease which has become widespread in Alberta. The fungus was thought to have been introduced and disseminated through nursery stock. Steps were taken in the fall to determine through greenhouse tests the susceptibility, of various related ornamentals, to this disease.

g) Septoria Canker of Hybrid Poplar: A continuation of an earlier survey indicated that the disease is more widespread than originally suspected. Numerous plantings in Peace River country, as well as in central and southern Alberta, were threatened as a result of infection. Recommendations by the Clinic, have been followed up, in an effort to limit the distribution of hybrid poplar cuttings until a control for this disease is found.

h) Fireblight: The Clinic, in cooperation with University and Canada Department of Forestry pathologists, undertook a survey of this disease on suspected wild and cultivated host trees in Alberta. In addition, the Clinic instituted a technique for the isolation and identification of the causal bacterium. This made possible a more accurate diagnosis of the disease. Also, an information leaflet was prepared, and several hundred copies distributed to home owners, to alert the public to the serious nature of this disease primarily affecting apples, pears, and mountain ash.

i) Air Pollution Plant Indicators: The Clinic continued to gather evidence of the usefulness of certain plants as indicators of air pollution. Investigation centered on tree lichens which, because of their feeding habits, may provide a cumulative index in such studies. Investigations of air pollution damage to forest vegetation, and to crop plants, provided valuable additional information for these studies.

PEST CONTROL AND PESTICIDE COMMITTEES

The Supervisor served as Secretary of the Pest Control Advisory Committee which held its 10th Annual Meeting in Decem-

ber. The P.C.A.C., with representatives from Provincial and Federal Entomology, Plant Pathology, Health, Wildlife, and Industry, served as a liaison group and resolved a number of problems involving conflicting interests e.g. pest birds, black fly control, etc.

The Supervisor served as Secretary of the Alberta Inter-departmental Committee on Pesticides (A.I.C.P.) which held its 3rd meeting in April and its 4th meeting in December. Various problems of concern to different Departments and Agencies were resolved e.g. analysis of stomach washings in poisoning cases, mosquito control recommendations, etc. The Supervisor represented the A.I.C.P. at a meeting of Federal-Provincial Pesticide Committees at Montreal in November. Two papers were prepared and presented 1) The Operation of the A.I.C.P., 2) Legislation Governing Commercial Pesticide Applicators.

The Supervisor served as Provincial representative at the Annual Meeting of the National Committee on Pesticide Use in Agriculture at Ottawa in February. A background paper "Pesticide Use and Control in Alberta" was prepared for the National Conference "Pollution and Our Environment" and the Conference was attended at Montreal in November. Several planning meetings were attended in connection with this Conference. The Supervisor served as Chairman of the Western Committee on Livestock Pesticides which met at Lethbridge in October, at the same time as the Western Committee on Crop Pesticides. The Assistant Supervisor also attended both Committee meetings which dealt with various problems of mutual concern on a Provincial and Regional basis. The Guides, for Livestock and Crop Pesticide Recommendations, developed by these Committees, were distributed as reference material for District and Municipal offices.

PESTICIDE RESIDUES

Of some 1400 samples tested for pesticide residues, 21 positive cases of food and agricultural products contained organochlorine insecticides over the allowed tolerance or actionable level. These products through grower cooperation were not permitted to enter trade channels. The Branch cooperated with the Dairy Laboratory, the Food Residue Committee and other agencies concerned in conducting special investigations on problem cases to determine the source of residues and to advise the producer and processor on preventive action.

Six meetings were held with other agencies on more difficult problems and 22 field trips were made on follow-up investigations. The major problems during the year involved (1) residues in root crops and forage grown on land previously treated with insecticides, (2) suspected contaminated feed, particularly root crops and forage as feed for milking cows, and (3) livestock and poultry fed mixtures containing seed grain treated with Aldrin or Heptachlor for wireworm control. As an example, one dairy farm with about 56 milking cows was checked throughout the year to ensure that the public received safe milk and the producer suffered no undue financial loss. The milk from all cows was

individually tested, along with all feeds used on the farm. Most residues came from vegetables grown on land treated with Aldrin in previous years. Considerable information was developed which will be useful for future problems.

The Branch cooperated with Food and Drug, on residue problems in food, and with Canada Agriculture on residue problems in commercial feed. Most actions were preventive to ensure that only safe food entered market channels and that animal products such as milk, meat and eggs did not become contaminated. Warnings were issued through publications, circulars and farm meetings on how residues developed and how they could be prevented. In cooperation with the Alberta Safety Council and other agencies, warning posters "Treated Seed is Poisonous" were developed and distributed throughout the Province. Through team work and cooperative action the pesticide residue situation was maintained at an acceptable level.

MISCELLANEOUS

The Supervisor and his Assistant spoke at 61 public meetings, Short Courses and Field Days. Ninety-six Conferences and Committee meetings were attended. Eleven Municipal Council and Agricultural Service Board meetings were attended on various pest problems. Fourteen articles were prepared for Farm Notes and Farm Press. Thirteen radio and TV interviews were made. The Division cooperated with the Department of Health in establishing and operating a training course for commercial pesticide applicators. In February the Supervisor attended a U.S. National Symposium "Scientific Aspects of Pest Control" at Washington, D.C. He also served as a member of the Central Rabies Control Committee. Liaison was maintained with University, Provincial, Federal and Industry agencies in connection with pest control and pesticide use. There were 535 field investigations made on various pest problems.

HORTICULTURE

P. D. McCALLA, B.Sc., P.Ag., Supervisor

P. D. HARGRAVE, B.Sc., M.Sc., P.Ag., Supt. Horticultural Station, Brooks

S. MOLNAR, B.Sc., P.Ag., Horticultural Station, Brooks

J. C. CHEDZOY, Oliver Tree Nursery

Horticulture Services

Alberta farmers planted 2,059,015 trees from the Provincial Nurseries at Oliver and Brooks. This is an increase of 46,181 from 1965. The number of farmers receiving trees was 4,952, the same as in 1965. For most of the Province, the weather was good at planting time and a satisfactory rate of survival was reported.

Tree Nursery - Oliver:

There were 2,039,755 trees shipped to farmers. In addition, 1,257,450 conifer seedlings were supplied to the Department of Lands and Forests; 15,726 Spruce and Pine to local Municipalities for School children; 2,780 larger trees for Parks and Junior Forest

Warden Clubs; 2,342 trees were supplied to pulp mills; and 12,334 provided to local Municipalities for Centennial projects; 55,320 trees and shrubs were supplied for miscellaneous projects; a grand total of 3,386,708, an increase over 1965 of 754,603.

An inventory of trees at the end of 1966 included 3,801,338 conifer seedlings for the Department of Lands and Forests; 4,128,675 seedlings for the Department of Agriculture and 15,933 larger trees for Provincial Parks, a total of 7,965,916 trees. The staff at the Nursery made 436,275 hardwood cuttings of several varieties of poplar and willow.

1966 was a very poor seed year and the following quantities were collected. Green Ash 462 lb., Manitoba Maple 126 lb., Villosa Lilac 50 lb., Mountain Ash 200 lb. of fruit and only 2 lb. of Siberian Larch. Seed of the following was purchased: Russian Olive, Mayday, Tartarian Honeysuckle, Scotch Pine, Villosa Lilac and Caragana.

The Nursery staff consisted of five permanent employees and four hourly workmen on a year round basis. Part-time staff consisted of ten men and women for the growing season and forty additional men for the shipping season. Six patients of the Alberta Hospital, Oliver, were employed for the first time and did a useful job.

The following new shelterbelts were planted: One-quarter mile of Peach Leaf Willow, one-quarter mile of Tartarian Honeysuckle, one-eighth mile of Hawthorn, one-eighth mile of Red Russian Willow, and three-eighth mile of Villosa Lilac.

Fourteen organized groups (980 people) visited the Nursery. Students of the Forestry School, Northern Alberta Institute of Technology, visited the Nursery three times as part of their Course of Study; 500 people called at the Nursery for information; 377 farmers personally picked up their tree orders; and, 200 called to take delivery of the larger White Spruce made available in 1966.

Seven hundred and forty-four seed beds were planted and approximately 400,000 seedlings transplanted in the spring and an additional 100,000 in the fall.

The presence of the Strawberry Root Weevil in parts of the Nursery is a cause for concern and vigorous steps were taken to rid the Nursery of this pest. Approximately eight acres of land were damaged by the construction of a pipe line. The new seed extraction plant is expected to be ready early in 1967. Eight hundred yards of peat moss were dug and hauled to the Nursery; ten acres received a heavy application of manure; three lots of hardwood cuttings were rooted for the Crop Clinic; and seven lots of grass seed cleaned for the Department of Agriculture.

The following new equipment was purchased: An air compressor, a Crawler tractor, replacement of a seed drill, two seed cleaners and a bundle tyer. The staff also built a new cultivator. The Department of Lands and Forests provided a grading table and seed germinator.

The Nursery Superintendent attended a meeting at Haney, British Columbia, to exchange ideas on container planting. He attended a meeting at Grande Prairie with the Department of Lands and Forests to discuss container versus conventional planting methods. Several meetings were held with officials of the Department of Public Works and the Federal Department of Forestry.

The Nursery staff planted 414 seed beds for the Department of Lands and Forests. 1,259,790 seedlings were shipped to the Forest Divisions. Six and one-half acres were treated with Dieldrin for the control of Strawberry Root Weevil. As an added precaution, the seed bed area was protected by a 1" - 10" board wall treated with tanglefoot.

Two thousand five hundred and twenty bushels of Pine Cones were received and to date, 252 pounds of seed have been extracted, cleaned, treated and stored. Three hundred and fifty-six germination tests were carried out for the Department of Lands and Forests; 1,763 pounds of treated seed were shipped to the various Forest Divisions; and 441 pounds to North West Pulp and Paper, Hinton. 243,328 Conifer Seedlings were transplanted and a small number of poplar lined out for test purposes. 60,272 containers with tree seedlings were shipped on instruction from the Division of Forestry.

Trials with containers made from plastic, phenol formaldehyde, coal and cellulosic acetate were carried out. Various methods of seedling containers along with different techniques for germinating conifer seed were tried. The Provenance Test with Jack pine was continued in co-operation with the Federal Forestry Service. The Poplar test was continued. Spacing studies on seed bed densities received further attention. Work at the Bugnet Historical Site progressed and the Nursery staff spent considerable time clearing and pruning trees. Various trials, Gramoxone for weed control, time of the year to lift seedlings for storage and length of time spruce and pine seedlings can be safely held in controlled storage, were started. Investigations were also undertaken to determine if spruce and pine can be held in storage over the winter. Several methods of seed stratification were tested in order to obtain the best results, especially with respect to container growing of conifer seedlings. Fertilizer tests were continued on seed beds.

Fifty, 3 - 4', American Elm were potted and made available upon request to his Honor, the Lieutenant Governor, for planting at various locations throughout the Province.

Horticultural Advisory Committee

This Committee representing the Research Stations of the Canada Department of Agriculture, the University of Alberta, the Plant Industry Division, and the commercial and amateur horticulture industry reported on research developments in horticulture to the Alberta Agricultural Coordinating Committee on December 12th.

Alberta Horticultural Association

The 14th Annual Meeting of the Association was held in Edmonton on January 29th. This meeting was adjourned and completed on August 11th at Olds. The Executive met twice during the year. The 12th Provincial Horticulture Show was held in Edmonton on August 16th and 17th. The Association again sponsored a Horticultural Judging School held at the Olds Vocational and Agricultural College on August 11th and 12th, and for the first time sponsored a Judging School in the Peace River area at the Fairview Vocational and Agricultural College on August 3rd and 4th. Four editions of the Association publication, "The Alberta Horticulturist", were issued. Mr. Lorne White of Calgary was elected President.

Potato Production Improvement Committee

This Committee appointed by the Horticultural Advisory Committee is composed of commercial and seed potato growers from all the major producing areas of the Province together with Department of Agriculture personnel interested in the production and marketing of potatoes. It acts as an Advisory Committee to the Horticultural Advisory Committee. The Committee met in Calgary in November.

Tuber Indexing of Foundation Potato Seed

The service of indexing foundation potatoes was continued by the Plant Industry Division; the Horticultural Station, Brooks; and the Plant Protection Division of the Canada Department of Agriculture. Twenty-one growers took advantage of the program and submitted 4,218 tubers for testing. 1,460 (33.5%) tubers were rejected, primarily because of Virus disease. In addition to the tubers tested for farmers, 875 tubers of the new variety, Chinook, were tested for the Lethbridge Research Station. Tubers of the following varieties Netted Gem, Warba, Norland, Early Ohio, Norgold Russet, Bliss Triumph, White Rose, and Pontiac were among those submitted by growers.

Seed Potato Production

The following is an eight-year summary of seed potato production in Alberta:

	1959	1960	1961	1962	1963	1964	1965	1966
No. of Growers	68	62	57	51	50	45	59	61
No. of Fields								
Inspected	266	253	249	190	182	174	237	223
Acres Inspected for								
Certification	2,070	1,847	2,196	1,617	1,607	15,765	2,880	3,831
No. of Fields								
Rec. Cert.	236	223	158	179	160	152	207	2,131
Acres Passed for								
Certification	1,716	1,547	1,442	1,415	1,475	1,271	2,552	3,266

Other Activities

The Supervisor of Horticulture visited twenty-two District Agriculturists' areas, and assisted with Farmstead Planning,

landscaping and the planting and management of trees. Other subjects, Centennial Tree Planting, small and tree fruit growing, planting the home grounds and highway planting and beautification were dealt with. Demonstrations were held on pruning fruits and ornamental plants. He addressed fourteen Public meetings and spoke at the 4-H Leaders' Conference and judged at three 4-H Achievement Days. Forty trips were made to the Oliver Tree Nursery, six to the Crop Clinic, and six to the University of Alberta to discuss horticultural matters of common interest. Two trips were made to the Peace River Block to address Public meetings and assist at a Judging School; and three to southern Alberta to attend grower meetings and assist with negotiations of the processed vegetable industry. The Supervisor of Horticulture is the Department's representative on the Edmonton Regional Planning Commission and attended six regular monthly meetings, three Executive meetings and one Rural Roads' Committee meeting. He is also the Department's representative on the Provincial Planning Board and attended nine regular meetings and served as a member of the Board on seven occasions to hear subdivision appeals. Four meetings were held with the Department's Marketing Council to assist with the developing of a new plan for the Processed Vegetable Growers. Two visits were made to the offices in Calgary and Lethbridge of the Canada Department of Agriculture Fruit and Vegetable Inspectors to discuss grading regulations and associated problems. He attended several meetings of the Department's Centennial Committee to help in the development of the Department's Centennial program. He acted as a judge at six local Horticulture Shows. He is a member of the Executive of the Alberta Horticultural Association and is responsible for editing the Association's official publication, "The Alberta Horticulturist". Several interviews were given on the Department's daily radio program, "Call of the Land", and one television appearance on the Red Deer station. In addition, he participated in the preparation of three television film strips. Sixteen press releases were published in the Department's Weekly Newsletter, "Farm Notes". Several hundred letters were written to answer enquiries on horticulture matters. The telephone was used extensively to supply information to calls by residents of Edmonton and vicinity. He attended the Annual three day Conference of the Western Canadian Society for Horticulture held in Saskatoon.

HORTICULTURAL STATION, BROOKS

Introduction

Steady progress was experienced in all program projects and capital developments. Planning of the season's work had envisioned a full complement of professional, technical and labour personnel, which was not experienced. Special capital projects related to the vegetable pilot program were assumed. All of these placed extra demands on all staff members. The Vegetable Specialist returned from post graduate work late in the spring and an Ornamental Horticulturist joined the staff in early summer, Overseas, American, and Alberta student technicians augmented the staff during the summer and were welcome

because of their background of experience and broadening influence. Due to the appointment of the Special Crops Supervisor to the position of Secretary-Manager of the Alberta Potato Commission, extreme demands from the growing vegetable and potato industry were felt by Station Staff. Co-ordinating the ornamental work and exploring the field of contact with the greenhouse industry progressed favourably. Developmental work on the new isolation station was undertaken. Staff personnel was able, through travel, to investigate the work in other areas and to meet many people associated with world horticulture.

Capital Developments

Major developments were the vegetable storage building, the beginning of a greenhouse pilot project and the ditch lining program. Through the co-operation of the Department of Public Works, the construction of a high humidity and low temperature vegetable storage unit was rushed to completion so that it could handle part of the late harvest vegetables. This storage, based on principles developed by Professor Guillou of the University of California, at Davis, and placed in practice by the Pressure Cool Company, Indio, California, makes use of a different principle for cooling and humidifying fruit and vegetable storage structures. High humidity and temperature control is brought about by passing water at the desired temperature over a series of filaments through which it flows as thin sheets, and against which air is forced. Calculated capacity of the new storage is 250,000 to 300,000 pounds of vegetables.

Design of the pilot greenhouses has incorporated many of the basic ideas developed by growers in Alberta. Envisioned was a house that could be constructed by a grower from materials and supplies available in Alberta and at a low capital cost. Templates for truss design and dies for aluminum extrusions were made available to those in the Trade wishing to follow the patterns of the pilot structures. The pilot house is 360 feet long, with six 50-foot growing sections divided from one another by 10-foot enclosed buffer areas. Heating and ventilation is the same for each section.

During the year the main irrigation ditch crossing the Station was modified and prepared for lining with polythene. This was necessary to overcome the seepage problem.

A contract was awarded, and excavation started, for an addition to the staff house. Additional boiler equipment was installed to increase heat capacity and to overcome possible boiler failures during extreme weather.

Station Programs

Fresh Vegetable Pilot Project

Investigations continued with respect to the production, storage and marketing of fresh vegetables. Carrots, tomatoes, parsnips, sweet corn, celery, head lettuce, cucumbers, broccoli, Brussels sprouts and onions were produced, stored and marketed. Cucumber field tests to establish yield and quality were con-

ducted in co-operation with pickling processors. The five varieties were tested. Burpee Pickler was the superior variety with Spartan Dawn and Spartan Champion being rated as suitable. Pickling onion trials were expanded and a trial shipment of four varieties was submitted to a Processing Company for evaluation. Pilot studies in celery production again proved that this crop can be produced successfully.

Off-Station Programs re Vegetable Production

The Station staff assisted the Brooks Vegetable Growers, the Vauxhall Carrot Growers and the Red Hat Brand Cucumber Growers' Co-operative at Medicine Hat.

Five members of the E.I.D. Vegetable Growers' Association used the pilot storage and grading facilities offered by the Station. They grew 35 acres of carrots, 3½ acres of onions and 2½ acres of sweet corn. The carrot yields varied widely and from the 25 harvested acres they handled 298 tons. Cull out was heavy, averaging 40%, leaving 7.2 saleable tons per acre. Marketing of the crop started early in August and was completed by the end of the calendar year.

A group of seven growers in association with the Pak-Wel Company at Vauxhall planted 70 acres to carrots. A very small part of this acreage was harvested. One grower in the Medicine Hat area successfully produced and marketed a carrot crop.

Greenhouse cucumber growers at Medicine Hat formed a Co-operative Marketing Association, registered as the Red Hat Co-operative. At their request assistance was given in designing and constructing a cucumber grading unit.

Tomato Breeding

Some 4,600 plants from hybrid seed and selected stocks were planted. Cool weather resulted in delayed early growth but the excellent growing conditions in August and early September developed a heavy crop of ripe fruit. From the planting 274 re-selections were made having particular merit. Twelve varieties were used in the 1966 greenhouse breeding program. Pollination and fruit set was very good with 103 crosses producing seed.

Laboratory Analysis of Tomato Acids

This program has been carried out with the co-operation of the Department of Plant Science, Horticultural Division of the University of Alberta. A correlation study of carboxylic acids in seven different stages of fruit development was made for determining relationships with earliness. Results of this work are to be presented as the basis of a Master's Thesis.

Potato Work

Five potato projects were undertaken. These were:

- 1) Tuber Indexing

- 2) Varietal Trials:
 - Adaptation Trial
 - Replicated Trial
 - Block Trial
 - Chipping Trial
 - Starch Trial
- 3) Breeding and Testing
- 4) National Trial
- 5) Early Tuberizing

Tuber Indexing

During the season 1965 - 1966 stock seed potato growers submitted 4,219 tubers for indexing. There were six growers from southern Alberta and fourteen from central and northern Alberta. Tubers were examined for bacterial ring rot, mosaic virus, spindle tuber, leaf roll, growth weakness and viability. After discarding unsuitable tubers 67% were returned to the growers.

Potato Breeding and Selection

Combinations were made between eight varieties in the crossing program. Netted Gem was the major variety used in combination with Norgold Russet, Saskatchewan Russet, Home Guard, Viking, Duke of York and S. 56-1. This work gave 10,813 seeds. Tabulation of the number of seeds grown each year since 1955 up to the 1966 production is given in Table I.

TABLE I

Year	Original No. of Seeds	No. Grown in 1966	No. Re-selected from Field in 1966
1966	10,813	—	—
1965	10,009	1,009	232
1964	11,929	144	34
1963	7,819	57	17
1962	9,800	30	15
1961	8,309	19	14
1960	7,249	2	2
1959	3,994	2	—
1958	7,278	—	—
1957	7,265	—	—
1956	6,619	1	1
1955	5,919	1	1

Advanced Brooks seedlings, 246 in number, were grown from tuber indexed seed stock. From these, 84 were re-selected for evaluation on the basis of yield, specific gravity, boiling and baking scores. Brooks potato seedlings from 1955, 1956, 1960, and 1961 were tested during the past year for chipping quality. A promising potato seedling, B.P. 55-24-2 has been selected from the 1955 breeding program because of its good culinary score, high specific gravity, earliness, netted skin, and scab resistance.

Two hundred and thirty-two selections were made from the 1966 field planting. This selection, from single plants, was based on general appearance and scab resistance.

Approximately 700 F₁ seedlings and 19 selected seedlings were obtained from the Potato Research Station, Aberdeen, Idaho. These were grown in isolation. Sixty selections were made from the seedling stock and 15 from the numbered re-selections. Tubers from these re-selections were tuber indexed and will be planted for further studies. The Aberdeen seedling 5943-1 appeared to be the smoothest and best appearing as compared with the standard of Netted Gem.

The maintenance plot carried 29 varieties from which 22 were re-selected and tuber indexed for future breeding purposes.

Potato Varietal Trials

Adaptation trials had a combined total of 170 varieties and seedlings. Four had their origin in the Brooks breeding program. Fifteen of the 1961 and 1962 seedlings, although previously discarded by the Station in 1965, were retained by the Isolation Station at Scott, Saskatchewan. On the basis of early harvest data and specific gravity reading, the two seedlings F6129 and F61274 were selected for earliness. These seedlings have been recommended for the 1967 early tuberizing tests.

On the basis of late harvest and specific gravity readings a recommendation has been made to maintain 51 for further observation. The most promising seedlings in this year's work were F6168 and FS6220. Seventeen Brooks potato seedlings have been recommended from the 1963 selection, for including in the 1967 trials.

Eighteen varieties from the regional trials and one variety from the Brooks trials were included in the replicated Prairie Trials. As a result of the early harvest data recommendations have been made that the varieties Norgold Russet and Viking be considered for licensing. Two other varieties, F5927 and F5975 are to receive further study. Late harvest resulted in the recommendation that 8 seedlings be retained. The variety La Rouge stood out in the Station section of this trial.

Early tuberizing trials were conducted with 36 varieties and seedlings, including selections from Fredericton, Scott and Brooks.

Early yield block trials, planted on potato growers' farms, included the standard Warba along with Viking, Pioneer, Norgold Russet and F5614. The growers were impressed with the variety Viking because of its early sizing ability and scab resistance. It will be grown in commercial blocks in 1967.

Block trials of varieties suitable for chipping included the seedlings F5208, F5889 and F52100. All three seedlings produced a good commercial product.

Cabbage Breeding

The Evergreen cabbage breeding and selecting project had seven basic lines. Three have been discarded and the four remaining lines have been placed in storage to test keeping quality and color retention.

Ornamentals

Collecting plant material for hardiness trials continued. The ornamental block has been extended and 65 *Syringa* varieties form the basis of the new planting. Damage to Junipers and Thuja by deer was extensive. Replacement types of the 1963 Banff selections were added to the Juniperus block and selections from Banff, Montana, and Cluny were made available to fifteen agencies for test purposes.

A formal rose garden surrounded by a spruce hedge has been established.

The lily collection was moved to a new location. A few replacements and additions were made to the group. The peonies have become well established and the Korean chrysanthemum collection gave an outstanding display. Some chrysanthemum varieties which seldom flower were prolific due to our late fall season. Among new varieties in the collection, submitted for trial by the Canada Research Station at Morden, the Universities of Manitoba and Nebraska, were Canary, Amber, Bonfire, Candy, Wahoo Chief, Sea Urchin, and North Platte No. 137.

The twenty-five Iris varieties have been gathered into one location and form the nucleus for another look at this very interesting group of perennial flowers. A large planting of centennial tulips was made late in the fall.

The total number of corms in the Kilduff gladioli collection has been reduced but the number of varieties is still well over 1200. The maintenance plot of the library collection, and the area devoted to the top fifty varieties, remains the centre of interest to a large portion of Station visitors.

The display of annual flowers along the entrance road was again a great success. The everlastings were of particular interest. Preliminary steps have been taken to develop this display into an evaluation garden for newly introduced annual flowers. The rock and perennial gardens were points of interest from early spring until late fall.

Tree and Small Fruits

Tree Fruit Varietal Orchard

Critical winter injury and fireblight records were made of all trees in this orchard. This was followed by thorough pruning and cleaning out of damaged wood. Winter injury was not as heavy as suspected but general fruit spur injury was noted. Fireblight infection showed a marked decrease. This was attributed to the regular spray program which, although aiding in control of the infection, increased rusting in the early and late apple varieties. Weed control in this orchard was by black polythene mulch films at the base of each tree, supplemented by the spraying of Gramoxone. This eliminated hand work around the base of the trees and general cultivation practices were carried out for the between row areas. Fifty-seven new additions and replacements were added to the orchard.

Controlled-Cross Seedling Orchard

Sixty-two new selections were made, bringing the total from the block planting to 641 trees. A further 250 trees were rogued for poor quality. All selections were brought in for storage evaluation. Promising selections are to be established in an observation orchard at this Station and the Agricultural and Vocational Colleges at Olds, Vermilion and Fairview.

Small Fruits

Strawberry varieties, selections and seedlings were maintained. Ninety-seven selections were made from a total population of 4,500 crosses.

Winter kill and yield data were recorded on the 31 varieties in the raspberry varietal trials. The following were the best varieties from a yield standpoint: Trent, Honeyking, Gateneau, Madawaska and Chief. Those showing less than 20% winter kill were Sylvan, Starlight, Latham, Chief and Druham. Severe chlorotic affects, attributed to winter injury, were apparent in Madawaska, Rideau, Gateneau, and Indian Summer. The propagation area yielded 15,000 plants of the variety Chief which were used to establish a commercial planting in the west Edmonton area.

At the close of the growing season there were 10,000 strawberry seedlings and 10,000 rhubarb seedlings in the cold frames ready for planting during the spring season.

Propagation

Further investigations into developing commercially practical methods for the rooting of softwood cuttings was continued.

The two greenhouses were planted to capacity during the growing season with potato, tomato, strawberry and rhubarb breeding work and with tuber indexing potatoes. Both houses were used to produce bedding out vegetable and flower plants in the early spring.

Shelterbelt Tree Production

A total of 178,200 trees were harvested during the fall months, of which 140,500 were shipped to the Oliver Nursery for distribution. Included in these shipments were standards of Ash, Willow and Elm for use in the School Centennial tree planting programs. Poor survival of rooted poplar and willow cuttings limited the shipment of these to 45,500 trees.

Propagating studies have indicated improvements in ability to germinate seed of Hanson Hedge Rose, Mongolian Cherry, Chokecherry, and Russian Olive. Planting directly to the field was tried for the first time with the use of a mist type irrigating system to control moisture and temperature conditions in the seed bed. Indications were that this is equal to, if not more satisfactory, than the production of trees under shade.

Following the adverse weather during the winter of 1965 - 66 light sets of seed were experienced and there will be a seed shortage for at least one year.

Spray Programs

The results of the trial work have been reported to the Weed Control Committee and form a part of their report. Routine

weed control programs in the orchards and vegetable plots continued. Weed control in orchards and shelterbelts consisted of dormant spraying of 2,4-D to control over-wintering broad-leaf weeds. Reglone and Gramoxone were used as directed applications as required during the summer months. Trials with Linuron and Agricultural Oil were laid down in shelterbelts for evaluation in 1967. Herbicidal trials in carrots with Linuron were conducted for possible damage at different rates and various stages of growth. No apparent damage resulted on carrots less than three inches high. Onions continued to present difficulties in weed control. Present methods and materials permit a 50 to 60 percent control.

Fireblight continued to be serious in orchards. Mildew was prevalent in currants, gooseberries and roses. Shothole virus was serious on chokecherry seedlings in the propagating houses. Damping-off and root-rot infections increased in the lath-house beds. The appearance of leaf-rust on the hawthorns modified planting programs for junipers, which are the alternate host for this disease organism.

Insect infestations were heavier than usual with a severe infestation of loopers on apple and plum species. Problems were also encountered with cabbage butterfly, cottonwood leaf beetles, aphids, pear slugs, spider mites, tent caterpillars and blister beetles. The general spray program was extended to overcome many of these insect invaders.

Processing

The 203 varieties of vegetables processed and frozen from the 1965 test plots were taste tested during the winter. The results of these tests and of previous years were used in making recommendations for the 1967 edition of the Horticultural Guide. The kinds of vegetables, with the number of each frozen and the highest scoring variety and its score, are tabulated in Table II.

TABLE II

Kind of Vegetable	No. of Varieties Frozen in 1965	Best Performing Variety	Score
Wax Beans	7	Kinghorn Wax	73
Green Beans	25	Resistant Tendergreen	79
Pole Beans	7	McCaslan	82
Broad Beans	3	Red Epicure	60
Broccoli	5	Cleopatra	75
Brussels Sprouts	3	B.G. 63251-A	79
Carrots	23	Red Cored Chantenay	81
Corn — Cob	50	Exp. 4813	83
Corn — Kernel	50	XP. 5319	81
Chard	2	Fordhook Giant	80
Kale	2	Blue Curled Scotch	63
Kohl Rabi	3	Early White Vienna	82
Green Peas	19	I. WA. 33-5-3	79
Spinach	4	New Zealand	72

During the 1966 season, 291 varieties of 15 kinds of vegetables were processed and frozen for quality trials.

Soil Heating Program

The soil heating plot first laid down in 1965, was expanded to include lead covered and bare galvanized heating wires. Both wires were buried 8 inches below the surface of the ground under the planted crop rows. The purpose of the trial was to lengthen

the growing season for high value, transplanted hot season crops. Tomatoes, peppers and cucumbers were transplanted to this trial on heated and control plots, under covered and open topped polythene cloches, under hot tents, under continuous polythene cloches with forced air circulation, and under brush cover.

Education

The ornamental, vegetable and fruit Field Days held at the Station during late August were well attended with 488 guests registered. These Field Days were the main effort of the Station's public education program but during the year 13 minor Field Days were held with 842 guests registered. There was a general up-trend for the Station to be host to numerous 4-H Clubs.

During the season 1,280 persons called at the office requesting specific information and 3,377 letters were answered.

Station staff covered most of the Province assisting at meetings and Conferences. These included 25 Short Course lectures, Club and Society meetings; 41 attendances at Horticultural meetings and meetings with potato, vegetable and greenhouse growers; the supplying of 15 judges of Horticultural Shows, 32 calls on vegetable growers in the Brooks area and 54 calls to farms in Alberta.

The Department of Agriculture and the Station was represented at the International Horticultural Conference held at College Park, Maryland, at the American Society of Horticultural Science, Brookings, South Dakota, and at the Western Canadian Society for Horticulture meetings in Saskatoon.

A greenhouse survey, in co-operation with all Alberta greenhouses, was commenced and Station staff has been actively involved in the ARDA Study of Fresh Vegetable Feasibility in Alberta.

Climate

The cold weather experienced in late 1965 continued into January with 18½ inches of snow and a temperature of -39°F. Deep snow cover continued through February although the temperatures were milder. High temperatures during the latter part of March left the ground clear of snow and relatively warm temperatures continued through April. Warm temperatures in May indicated a good start for the growing season but June and July were very cool with strong winds and many electric storms. Total rainfall for June was 2.78 inches and for July 3.19 inches. Heavier than normal rainfall also occurred in August with 2.58 inches recorded. However, high temperatures in August and September allowed good maturity of all crops and following a light frost on September 11, higher than normal temperatures continued until October 11 when 9 inches of heavy, wet snow fell causing extensive damage to all tree and shrub plantings. An unusual rainfall was recorded on December 13 which totalled .19 inches.

Length of the growing period was 116 days with 9.98 inches of precipitation and a total of 1,247 hours of sunshine. Total precipitation for the year was 16.18 inches.

Report of the Program Development Division

1966

C. J. McANDREWS, B.Sc., M.Ag., P.Ag., Director
D. H. McCALLUM, B.S.A., P.Ag., Chairman
Agricultural Products Marketing Council
C. H. FERRIES, B.S.A., M.S., P.Ag., Secretary
Agricultural Products Marketing Council
H. W. THIESSEN, B.Sc., M.Ag., P.Ag., Chairman
Lands and Forests Conservation and Utilization
G. R. STERLING, B.Sc., M.Sc., P.Ag., Provincial ARDA Director
A. F. BELYEA, B.Sc., P.Ag., Regional Resource Co-ordinator
L. GAREAU, B.S.A., M.Sc., P.Ag., Regional Resource Co-ordinator
E. B. NAGLE, Liaison Public Relations Officer, ARDA
P. J. SHEEHAN, B.Sc., Assistant Regional Resource Co-ordinator
E. ZAWADIUK, B.Sc., Assistant Regional Resource Co-ordinator

INTRODUCTION

The Program Development Division was established on April 1st, 1966. Charges and assignments included the development of new agricultural programs and the administration of programs that were not readily identified with a specific commodity area of discipline of the Departments other six divisions.

Active program branches that were included in the Division were: Agricultural Products Marketing Council; Conservation and Utilization Committee; ARDA, and Official Trustee and Colonization Manager of United, Lethbridge Northern, and Macleod Irrigation Districts.

Assignments for development were: irrigation policy; a municipal-agricultural programs branch; liaison on applied research with the University of Alberta Faculty of Agriculture; liaison within the department on water resources; and advisory services to the Highway Traffic Board.

The Director was appointed to serve on the Alberta Agricultural Grants Awards Committee, attending five meetings involving the review of research project proposals and the funding of same for the years 1966 and 1967.

Numerous terminal assignments were added to the Division's function during the year. These were inter-departmental and essentially of service to the deputy minister's office.

AGRICULTURAL PRODUCTS MARKETING COUNCIL

The Agricultural Products Marketing Council was established July 1, 1965 for the purpose of administering the Alberta Marketing of Agricultural Products Act. It is the function of the Marketing Council to receive and consider requests from organized groups of producers who wish to establish a plan that would improve the marketing of their products; to assist in the development of any plan and regulations; to hold hearings and conduct

plebiscites; to supervise the operation of producer boards and marketing commissions; and to advise the Minister of Agriculture on all matters relating to the establishment, operation and control of boards and commissions.

Members of the Council are Chairman D. H. McCallum, Secretary C. H. Ferries, and Members R. H. McMillan, K. Williams and L. P. Bromham.

AMENDMENTS TO THE MARKETING ACT

Upon the recommendation of the Marketing Council several amendments were made to the Act. The most important amendment concerned the requirements for approval of any plan to establish a producer marketing board. Prior to the amendment, this Section stated that a plan would not become operative until it had by vote been approved by fifty-one percent of the persons engaged in the production of the regulated product. Owing to the large number of small disinterested producers who did not vote it was difficult for producers to receive sufficient support to put their plans into operation. This Section now states that a plan does not become operative until it has been approved by a majority of the eligible producers who have voluntarily registered with the Council for voting purposes. The Council must determine and make public prior to the vote being taken, what constitutes an eligible producer, the percentage that must register, and the percentage of the total product marketed the registered producers represent.

It was believed that with this change in voting requirements, the producers who were the most concerned and affected by a board, would have more "say" in whether or not they wished to have a producer board established.

NEW MARKETING PLANS ESTABLISHED

As a result of the 1965 amendments to the Marketing Act that broadened the Act to make it more useful to producers, three plans were established during 1966.

1. Plan Respecting the Alberta Potato Commission

This plan provides for the establishment of a Commission consisting of three potato growers, two potato wholesalers and one potato processor. These men were appointed by the Lieutenant Governor in Council. The main purposes of the plan were:

- (a) to advertise and promote the sale of Alberta potatoes,
- (b) to establish and control the use of a distinctive trade mark in order to ensure adherence to quality standards as established by the Commission, and
- (c) to assist and educate growers, dealers and processors in the production, processing and marketing of potatoes.

The regulations under the plan apply to all potatoes grown in Alberta. Financing is by a levy of five cents per hundred-weight on all potatoes marketed.

Actual operation of the Commission began on June 1, 1966, but even with limited funds thus far, for advertising, new markets for Alberta potatoes have already been developed in the southern United States. Other large centers such as Detroit, Toronto and Montreal have been given commitments for a considerable quantity of potatoes.

2. Alberta Broiler Growers' Marketing Plan

This plan provided for the establishment of a Board consisting of five broiler growers, to be elected by the registered growers. A Provisional Board was appointed by the Marketing Council to hold office until the first annual meeting of the registered growers. The main purposes of the plan are:

- (a) to maintain a fair stabilized price for the regulated product,
- (b) to develop and maintain orderly marketing of the regulated product, and
- (c) to ensure a continuous year-around supply of the regulated product for the trade and consumer market.

The regulations under the plan apply to those growers marketing two thousand or more broilers annually. The functions of the Board are financed by a levy of one-fifth of a cent per pound live weight of broilers marketed.

Actual operation of the Board began on September 1st, 1966.

3. Alberta Turkey Growers' Marketing Plan.

Similar to the broiler plan, this plan provided for the establishment of a Board consisting of five turkey growers to be elected by the registered turkey producers. A Provincial Board was appointed by the Marketing Council in December with the first meeting scheduled for early in January, 1967. This Board will hold office until the first annual meeting of the registered growers.

The main purposes of the plan were exactly the same as those for the broiler plan.

The regulations under the plan have yet been finalized but they are expected to apply to growers who market 300 or more broiler or heavy weight turkeys.

MARKETING PLANS PENDING

The Council received a plan from the Alberta Commercial Egg Producers' Association for the establishment of an egg and fowl marketing board. This plan was reviewed by Council and returned to the Association for further study.

In addition, Council had under consideration three plans for the establishment of a Marketing Commission for hogs. Since agreement on one plan by the various farm and hog organizations was not possible, the Council drafted a plan embodying what were considered the best features from the three plans. This composite plan was forwarded to the directors of the Alberta Swine Council for consideration.

The Alberta Vegetable Marketing Board, which was formed in 1958, submitted to Council a revised plan and regulations in order to conform with amendments made in 1965 to the Marketing Act. These were reviewed by Council and some additional changes have been suggested.

LAND AND FOREST CONSERVATION AND UTILIZATION COMMITTEE

Effective October 15th, Mr. J. L. Kerns transferred to the Animal Industry Division; Mr. H. W. Thiessen replaced him as committee chairman.

Due to departmental reorganization, promotion and death, changes were made in the committee membership. Order-in-Council 2217/66 dated November 28th, 1966 established the following committee members:

H. W. Thiessen, Committee Chairman, Department of Agriculture.

A. M. Wilson, Director of Plant Industry Division, Department of Agriculture.

R. E. Bailey, Director of Water Resources Division, Department of Agriculture.

D. S. Lawson, Director of Lands, Department of Lands and Forests.

R. G. Steele, Director of Forestry, Department of Lands and Forests.

S. B. Smith, Director of Fish & Wildlife, Department of Lands and Forests.

A. R. Isbister, Director of Field Services, Department of Municipal Affairs.

J. G. MacGregor, Power Commissioner, Department of Industry & Development.

Dr. J. A. Toogood, Head, Soil Science Section, University of Alberta.

The committee as a whole convened twice during 1966; however, several additional meetings were held by the Chairman and some committee members with other government officials regarding the transfer of grazing reserve development, the transfer of the Soil and Feed Testing Laboratory administration and land clearing in rural development areas.

Under the Conservation and Utilization Committee the following work was completed:

Rannock Grazing Reserve:

Approximately 800 acres were cleared and broken, two and one-half miles of fence constructed and two parcels of land purchased.

Minburn Grazing Reserve:

Approximately 400 acres were cleared, 1200 acres were broken and seeded and one pasture manager residence nearly completed.

Wanham Grazing Reserve:

One half mile of fence and a breaking contract started in 1965 was completed.

Buck Mountain Grazing Reserve:

Eight hundred acres were cleared, 1125 acres broken and seeded, six miles of fence and five miles of trails were completed and one pasture manager residence nearly completed.

Whitemud Grazing Reserve:

Five miles of fencing were completed.

Medicine Lake Grazing Reserve:

One parcel of land was purchased.

Stony Plain Grazing Reserve:

One thousand, one hundred and forty acres were cleared and broken. A partially completed house was purchased for the pasture manager residence.

Westlock Grazing Reserve:

One parcel of land was purchased.

Smoky Lake Grazing Reserve:

Three parcels of land were purchased.

St. Paul Grazing Reserve:

Eight-six parcels of land were purchased.

Thorhild Grazing Reserve:

One parcel of land was purchased and six miles of fence completed.

Kleskun Lake Grazing Reserve:

Approximately eight miles of drainage channels were constructed in co-operation with the Water Resources Division.

Seven Persons Grazing Reserve:

Seventeen parcels of land were purchased. Three miles of perimeter fence were completed and dryland grass seeding was started on 320 acres. In addition five dugouts and dams were constructed.

Bow Island Grazing Reserve:

Approximately 140 acres were land levelled and five dugouts constructed.

Purple Springs Grazing Reserve:

Some rocks were picked and 85 acres were seeded to irrigated grass. This land was irrigated three times. Dryland grass was seeded on 160 acres.

Grassy Lake Grazing Reserve:

Land levelling and drainage construction which was commenced during 1965 was completed during 1966. Approximately 90 acres were seeded to irrigated grass and irrigated several times. A set of corrals was constructed. Approximately 130 acres were reseeded to dryland grass.

Pinhorn Grazing Reserve:

Irrigation feasibility studies which were initiated the previous year were continued in the form of soil sampling and infiltration studies. Approximately four miles of road were rebuilt with the co-operation of the County of Forty Mile No. 8.

Twin River Grazing Reserve:

The corrals were rebuilt.

Grazing Associations:

Grazing Associations received assistance in the form of interest free loans to implement improvements as indicated below:

Highland Grazing Association — \$2,040.00 for fencing materials.

Peace Valley Stockmen's Grazing Association — \$3,294.00 for fencing materials.

Demonstration Plots:

Plots on the farms of Messrs. Green, Wade and Fox Brothers were conducted during 1966. Yield tests were taken and recorded on each plot.

Land Assembly Project:

This project was approved by Federal ARDA on October 12th, 1966. It was estimated that \$600,000 will be expended annually regarding this project. Regulations were being drafted

to cover the assembly of lands. Forty-nine parcels of land were purchased throughout the year.

Soil and Feed Testing Laboratory:

The administration of this laboratory was transferred to the Plant Industry Division.

Census Division 14:

Offers to purchase were extended to 27 farmers holding 48 parcels of land in this Rural Development Area in order to expedite the Farm Consolidation Project. On December 31st, 1966 fourteen farmers holding 27 parcels of land had accepted the offer.

AREA REHABILITATION AND DEVELOPMENT ADMINISTRATION

The ARDA Branch was active throughout 1966. The ARDA Advisory Committee held 11 meetings during the year, handling 56 projects in a formal way and discussed and assisted with six other problems indirectly related to ARDA. The ARDA Co-ordinating Committee of Deputy Ministers held nine meetings and, of course, dealt with the 56 projects as well as other matters of mutual concern.

The ARDA Director, besides attending the 20 meetings of the ARDA Advisory and ARDA Co-ordinating Committees, attended a total of 85 other meetings involving small committee meetings of three or four people to large public gatherings which he addressed. All of the 85 meetings mentioned above had to do with the co-ordination of ARDA programs with the various departments of the Provincial Government, Federal Government, and the University. The Director also attended two courses at the Banff School of Fine Arts, participated actively in a symposium at Banff, attended the conference of Indians and Eskimos at Winnipeg, and participated in a two-week short course on extension methods at East Lansing, Michigan.

During the year, Mr. E. B. Nagle was appointed as Liaison and Public Relations Officer as of September 20th; on October 1st Mr. L. Gareau, formerly District Agriculturist at Bonnyville, was appointed Regional Resource Co-ordinator for C.D. 12; and at the same time Miss Edith Zawadiuk, formerly Home Economist for that area was appointed as Assistant Regional Resource Co-ordinator for the same Census Division.

Approval was obtained to start rural development in Census Division 15 for the north western portion of the province. At the close of the year steps were being taken to advertise for a Regional Resource Co-ordinator and Assistant for this area.

Considerable expansion was planned in the staff of Census Division 14 with six new positions being created by the end of the year but no appointments made. The new positions for Edson were — Training and Guidance Counsellor, Land Adjustment Specialist, two Home Development Specialists, Community Advisor, (male) and two Community Advisors, (females).

Several personnel changes occurred on the ARDA Advisory and ARDA Co-ordinating Committees. The personnel of each committee at the close of the year was as follows:

ARDA Advisory Committee

- Mr. G. R. Sterling, Provincial ARDA Director, Department of Agriculture (Chairman)
- Mr. H. W. Thiessen, Chairman, Conservation & Utilization Committee, Department of Agriculture (Secretary)
- Mr. D. S. Lawson, Director of Lands, Department of Lands and Forests
- Mr. A. R. Isbister, Director of Field Services, Department of Municipal Affairs
- Mr. R. E. Bailey, Director of Water Resources, Department of Agriculture
- Mr. A. M. Wilson, Director, Plant Industry Division, Department of Agriculture
- Mr. J. G. McGregor, Chairman, Alberta Power Commission, Department of Industry and Development
- Dr. J. A. Toogood, Professor of Soil Science, University of Alberta
- Mr. R. G. Steele, Director of Forestry, Department of Lands & Forests
- Mr. D. I. Istvanffy, Provincial Statistician, Department of Industry and Development
- Mr. S. B. Smith, Director, Fish & Wildlife, Department of Lands & Forests
- Dr. G. R. Purnell, Director, Farm Economics Branch, Department of Agriculture
- Mr. S. S. Graham, Director, Extension & Colleges Division, Department of Agriculture.
- Mr. J. R. Smith, Director, Social Planning & Development, Department of Public Welfare
- Mr. Noel Dant, Provincial Planning Director, Department of Municipal Affairs
- Mr. S. F. Shields, P.F.R.A., Canada Department of Agriculture, Federal Building.

ARDA Co-ordinating Committee

- Dr. E. E. Ballantyne, Deputy Minister, Department of Agriculture (Chairman)
- Mr. G. R. Sterling, Provincial ARDA Director (Secretary-Member)
- Mr. A. W. Morrison, Deputy Minister, Department of Municipal Affairs
- Mr. J. E. Oberholtzer, Deputy Minister, Department of Industry & Development
- Dr. V. A. Wood, Deputy Minister, Department of Lands & Forests.

The following is a brief summary of the projects handled by the ARDA Advisory Committee, ARDA Co-ordinating Committee, Provincial Cabinet, and the Federal Government. Note — 65 indicates projects partially handled in 1965.

Project 1/66 — A Study of a Developed Irrigation District

This project was a supplement to complete the preceding project of the same name. It involved a socio-economic study of the Eastern Irrigation District to determine the amounts and to whom benefits accrued.

Project 2/66 — Appraisal of the Value of Land Levelling in the Irrigation Districts of Southern Alberta

This project was a renewal of a preceding one (9015) and was an economic study to determine the value of land levelling and how high per acre an individual may go with this particular type of land improvement. It compared the cost of land levelling to sprinkler type irrigation.

Project 3/66 — Canada Land Inventory Co-ordinator

This project called for a full-time employee to co-ordinate the five sectors of the Canada Land Inventory. This position was not filled at the close of the year.

Project 4/66 — Phase II of the Alberta Recreational Land Inventory

This project was the second phase of the national classification of land capability for recreation under the Canada Land Inventory.

65 — Land Reclamation

This was a renewal of a project, the purpose of which was to reclaim land damaged by wind and water erosion, land seriously affected by weeds, and lands affected by alkalinity.

65 — Woodlot, Watershed Survey

This was a renewal of a previous project covering a survey of existing woodlot areas, and to give extension assistance to the owners of such woodlots in the Counties of Lacombe, Ponoka, and Wetaskiwin.

65 — Field, Roadside, and Farm Shelterbelt Plantings

The purpose of this project was to encourage the planting of field, roadside, and farm shelterbelts in order that more protection can be obtained from drifting snow and soil erosion, and protection for farm buildings, livestock, etc.

65 — Alberta Land Assembly

This project was a renewal of a similar previous project under the Old Agreement, and allows for the purchase of poor agricultural lands as they are offered for sale in order that they may be assembled for various projects at a later date.

65 — Soil Capability for Agriculture in Alberta

This was a renewal of Project 9025 covering the Soil Capability for Agriculture sector of the Canada Land Inventory.

65 — Forest Establishment and Improvement

The purpose of this project was to improve forest in Census Division 14, and at the same time to assist with income in our pilot rural development area. This project was completely approved and then withdrawn at the request of the provincial forestry officials because they felt they could obtain better financing under the Forestry Agreement.

Project 5/66 — Identification and Measurement of the Recreational, Grazing, Water, and Wood Producing Potential of the Wildlands of Southwest Alberta and of the Income Employment which can Accrue Therefrom

The purpose of this project was to develop a procedure and supply information that would aid in the making of decisions about the use of the major resources in part of the Bow River Forest near Calgary. This project was rejected by the Advisory Committee because Forestry informed them that this work was already going on by the Forestry Branch of the Department of Lands and Forests.

Project 6/66 — Land Improvement for Grazing Associations

This was a project to assist the Grazing Associations of Alberta with various types of improvements to the Crown lands which they lease.

Project 7/66 — Promotion of Tourism in C.D. 14

This project was to encourage tourism in C.D. 14, which has great potential. The main purpose of this project was to print a map and brochure covering all of the area.

Project 8/66 — A Study of the Groundwater Resources in the Red Deer Area

The purpose of this project was to study, collect, and analyze all available information on groundwater in the area adjacent to Red Deer. This study was one-quarter financed by the City of Red Deer. This project was rejected by Federal ARDA.

Project 9/66 — Keg River Metis Colony No. 1, Brushing and Breaking Program

The objective of this project was to increase the cultivated acreage of Metis Colony settlers through an outright unrecoverable grant. This project was discussed extensively by the ARDA Advisory Committee and tabled until a later date.

Project 10/66 — Stimulants to Economic Development in Slow Growing Regions — A Symposium

The purpose of this project was to bring together all available socio-economic information pertaining to rural development. This was done by bringing prominent speakers and approximately 200 participants to a symposium at Banff.

Project 11/66 — National Wildlife Land Capability Study

This project was the National Wildlife Land Capability sector of the Canada Land Inventory.

Project 12/66 — Rural Study Groups on Rural Sociology and Rural Economics

This project was submitted by the Farmers' Union and Co-operative Development Association, the purpose of which was to disseminate sociological and economical information through local farmer study groups.

Project 13/66 — Development of Metis Colonies

This was a follow-up of Project 9/66 involving eight Metis Colonies located throughout Alberta. The purpose of this project was similar to 9/66 except that it was based on a colony basis rather than an individual Metis basis. This project was tabled for further study by the Advisory Committee.

Project 14/66 — An Economic Analysis of Land-Use Alternatives: An Alberta Pilot Study

This project, submitted by the Forestry Branch, Department of Lands and Forests, was intended to study the economic land use alternatives in an area of virgin land south of Grande Prairie.

Project 15/66 — Development of Alberta Lands for Conversion and Use as Grazing Reserves in Alberta's Rural Development Area

This was a project to develop grazing reserves throughout the northern part of Alberta. It was approved provincially but returned by Federal ARDA for reorganization. The final draft was not approved completely as at the end of the year.

Project 16/66 — Development of Alberta Lands for Conversion and use as Grazing Reserves in Southern Alberta

This was very similar to Project 15/66, but covering the southern portion of the province. It was approved provincially but returned by Federal ARDA for reorganization, and not approved completely by the end of the year.

Project 17/66 — Lions Tourist Camp Site

The purpose of this project was to establish a tourist camp site in Census Division 14 at the Town of Edson, in order to encourage tourism in that area. This project was financed 25% by the Edson Lions Club.

Project 18/66 — Forest Recreation Area Development Program within Rural Development Area during Period 1966-1970

The purpose of this project was to build rustic type tourist recreation areas in the forested areas of the province, in order that people going into these areas have adequate facilities and consequently lessen the dangers from forest fires.

Project 19/66 — Alberta Rural Road Study

This project, submitted by the Department of Highways, was intended to make a complete study of the secondary road system of Alberta. Its final objective was to come up with an overall plan as to where secondary roads should be placed. It was rejected by Federal ARDA.

Project 20/6 — Forest Land Use Capability Classification

This was a renewal of a previous project under the Canada Land Inventory. Its purpose was to classify land from a forest capability standpoint.

Project 21/66 — An Inventory of Soil Capability for Forest Production in the Province of Alberta

This project was a continuation of Project 48004, and was intended to decide whether the lands along the green-yellow line should be used for agriculture or forestry.

Project 22/66 — The Empress Artificial Lake Project

The purpose of this project was to build an artificial recreational type lake in a valley located approximately two and one-half miles north of Empress. This project was rejected by the Advisory Committee.

Project 23/66 — Projects under Section 30, 1966-67

Section 30 of the Federal-Provincial ARDA Agreement allows for an expenditure of \$6.00 per family to be used to increase income and employment opportunities in the rural development area. This project covered Alberta's portion of this money for 1966.

Project 24/66 — Flood Control Data Collection and Analysis

The purpose of this project was to collect economic information regarding damages from flooding, in order that these figures would be available to estimate the need or benefits from flood control structures. The idea of this project was to collect this type of data before the need to use it arises.

65 — Engineering Summaries of Hydrologic Characteristics of Alberta Rivers

This project was submitted to collect together and summarize hydrological characteristics of rivers in Alberta. It will provide people involved in rural development with a complete and compact set of key data by which a rapid assessment can be made of the long-term water resources and run-off characteristics of Alberta rivers.

65 — Engineering Studies of Erosional Behaviour and Channel Regime of Alberta Rivers

The objective of this project was to survey and analyze, and report on rivers in Alberta in respect to erosion, channel formation and change, and sedimentation.

Project 25/66 — Alberta Rural Development and ARDA Staff

This was a supplement to Project 28017 and covered the Regional Resource Co-ordinator and Assistant Regional Resource Co-ordinator for Census Division 15.

Project 26/66 — Comprehensive Inventory and Socio-Economic Analysis of Resources in Census Division 15.

This covered the socio-economic study of Census Division 15 in preparation for social and economic development of the area.

Project 27/66 — Therriault Community Water Storage

The objective of this project was to provide water storage to ensure year round water supplies for livestock for twelve farmers living downstream from the proposed project. This project was rejected by the Advisory Committee because it was already heavily subsidized by P.F.R.A.

Project 28/66 — Purification of Millers Lake

The purpose of this project was to increase oxygen supply in Millers Lake in order that fish may over-winter. This project was rejected by Federal ARDA but we later approved it under Project 28036, or Section 30 of the ARDA Agreement.

Project 29/66 — Alberta Rural Development and ARDA Staff, Second Supplement to 28017

This project was to add staff in Census Division 14 to assist with the farm adjustment program, the retraining of farmers who wish to take up other vocations, and staff for home visitations in order to reach more homes through Home Development Agents and local community indigenous advisors. The staff involved were Training and Guidance Counsellors, Home Development Agent, Community Advisory, male, and Community Advisory female, and Land Use Specialist.

Project 30/66 — Forest Recreation Area Development Program within Rural Development Area during period 1966-1970

This project is the same as Project 18/66, with the exception that it covers the remaining portion of the province not covered by the former project. It was temporarily held by Cabinet and was not presented to Federal ARDA at the close of the year.

Project 31/66 — Supplement to Project 28026, A study of a Developed Irrigation District

The purpose of this project was to provide funds to print a P.F.R.A. report entitled "Annual Cost of the Irrigation District".

Project 32/66 — Access Road to Silver Summit Ski Hill

Silver Summit Ski Lodge Limited requested that ARDA build approximately four and one-half miles of road to a ski hill resort. This project was discussed several times by the Advisory Committee and was tabled by them pending further investigation.

Project 33/66 — Meridian Land Reclamation and Irrigation

This project covered back-flood irrigation and drainage of approximately 260 acres of hay and crop land south east of Gull Lake. The project was tabled by the Advisory Committee.

Project 34/66 — Establishment of Labour Hostels for Farm Workers in the Sugar Beet and Vegetable Growing Areas of Southern Alberta

The objective of this project was to provide adequate housing accommodation for Indian farm workers while they are working in the vegetable growing areas of Southern Alberta. This project was discussed twice by the ARDA Advisory Committee and tabled pending further investigation.

Project 34/66 — Home Visitor's Program, Census Division 14

The purpose of this project was to train indigenous leaders to make home visits and consequently assist low socio-economic families in Census Division 14. At the close of the year this project was not approved by Federal ARDA.

Project 36/66 — Clearing Arable Land for Agriculture, Census Division 14

The socio-economic study in this census division indicated the need for more arable land. The objective of this project was to encourage the breaking of more land in order to make farm units more economical. At the close of the year, this project was approved by the Advisory and Co-ordinating Committees but not by Provincial Cabinet.

Project 37/66 — Farm or Woodlot Enlargement and Consolidation, Census Division 14

The Socio-economic study of this area revealed a number of uneconomical farm units. The purpose of this project was to adjust farm size for those who would like to stay on the farm by giving them an opportunity to obtain a large enough land base to have an economical farm unit. This was approved by ARDA Advisory and Co-ordinating Committees but not by Cabinet at the close of the year.

Project 38/66 — Supplement to Project 28029, Stimulants to Economic Development in Slow Growing Regions — A Symposium

The cost of the original project was under-estimated. This one was necessary to defray the cost of the original project.

Project 39/66 — Third Supplement to Project 28017, Alberta Rural Development and ARDA Staff

This project involved a Home Development Agent with nursing training and background. This project was approved provincially and at the request of Federal ARDA it was added onto Project 29/66, but at the end of the year was not approved by Federal ARDA.

Project 40/66 — Groundwater Exploration and Aquifer Evaluation in the Alberta Plains

This was a renewal of a similar project of the same name. It involved the groundwater studies throughout Alberta. This was not approved by Federal ARDA at the end of the year.

Project 41/66 — An Economic Analysis of Water Resource Development in Alberta

This project had three main objectives: (1) to estimate provincial demands for water and alternative uses, (2) to conduct a comprehensive input-output analysis with respect to water development and utilization, (3) to determine socio-economic benefits and costs resulting from water development. This project was approved by the Advisory Committee only at the close of the year.

Project 24/66 — Soil Capability for Agriculture in Alberta

This was a renewal of Project 48010 and is part of the Canada Land Inventory. It was approved by the Advisory Committee only at the close of the year.

Project 43/66 — Forest Land Use Capability Classification, 1967-68

This was a renewal of a similar project of the same name, and part of the Canada Land Inventory. It was approved by the Advisory Committee only at the close of the year.

Project 44/66 — An Inventory of Soil Capability for Forest Production in the Province of Alberta

The objective of this project was to study the use of land along the green-yellow line, and also the white area of the province. This project was tabled by the Advisory Committee.

Project 45/66 — Economic Efficiency in Pasture Production and Improvement in Alberta

This was a supplement to Project 9040, which was done by the Farm Economics Branch of the University of Alberta. This supplement provided for additional costs which were underestimated in the original project. This was approved by the Advisory Committee only at the end of the year.

Project 46/66 — Alberta Recreational Land Inventory

This was a renewal of a project covering the recreational land sector of the Canada Land Inventory. This was approved by the ARDA Advisory Committee only at the end of the year.

Project 47/66 — Recreation and Tourist Facility Program, 1966-70

The objective of this project was to provide additional recreational facilities required by the Alberta public. It involved improvements to present parks and the development of new ones. This was approved by the Advisory Committee only at the end of the year.

Project 14/66 — An Evaluative Scheme for Regional ARDA Projects

The objective of this project was to evaluate the present rural development schemes in Alberta from both an economic and sociological aspect. This project was tabled by the ARDA Advisory Committee for further information.

Report of the Edson Regional ARDA Office — C.D. 14

This report includes activities of both the Regional Resource Co-ordinator and the Assistant Regional Resource Co-ordinator. During 1965, efforts were expended on identifying leaders and giving them some leadership training and disseminating to them as much information as possible concerning present conditions in C.D. 14 and projected statistics for future development.

In 1966, this leadership had been active and credit for much of the progress must be given to volunteer leaders with reinforcement and technical resource assistance from the Regional staff and other government personnel.

Dissemination of Information

Zone Development Committee meetings were held in each of the five zones. The purpose of these meetings was to discuss development plans generally, or to discuss and approve or refuse projects submitted from special interest groups. One meeting of the Central Advisory Council, with an attendance of 30, was held to review work completed over the past year and to discuss suggested areas of development. Ten zone meetings with an attendance of 70 were held.

The Agricultural Committees in zones 2, 3 and 4, were organized to discuss problems directly related to agriculture in their zone. The committees in zones 2 and 3 discussed the need for assistance in the clearing and developing of land, and made their recommendations for an assistance policy to cover this phase of agriculture. The committee in zone 4 was primarily concerned with drainage and has had a number of meetings to discuss this agricultural problem. A survey was requested and will be done by Water Resources. All of these committees held many neighborhood meetings independently, with professional assistance on request. Education was of prime importance to all Agricultural Development. The ARDA staff attended 12 Agricultural Committee meetings, with a total attendance of 500.

Recreation-Tourism Committee meetings were held in all zones to discuss specific recreational potentials. Several meetings were attended in zone 2 to assist the joint Chambers of Commerce of C.D. 14 to organize for and present a project for assistance in publishing a tourist brochure. Numerous meetings were also held with the committee from the Lions Club responsible for preparing the project for the Lions Campsite. The campsite construction is well underway with construction up to schedule. Thirty-one meetings were attended with an attendance of 279.

Leadership Development and Training Programs for action leaders were instituted. The programs were sponsored by the

Edson Recreation and Cultural Development Committee and the Toastmistresses, both locally and internationally. Three leadership training sessions were sponsored in Edson for action leaders, and two one-day seminars were held with the Toastmistresses. This series is to be continued in 1967. Eight meetings were held with an attendance of 200.

Public Relations and Rural Development requests were received from a wide variety of groups asking for talks on the philosophy of rural development as it applied to their special interest. These included Chambers of Commerce, schools, churches, nurses' associations, agricultural groups — both professional and non-professional, youth organizations, etc. These meetings were held both in C.D. 14 and at other centres throughout the province. There is great interest in rural development, or community development, and, as C.D. 14 represents an area in which a grass roots program is developing, many organizations are interested in learning more about the philosophy and methodology. Forty-eight meetings were attended with an audience of 1,448.

The 4-H Youth Program was the major youth group worked within C.D. 14, but other organizations have also requested assistance. In most cases, they need help in program development and the involvement of members. Twenty-one meetings were attended, with a total attendance of 525.

Farm visits concerning Agricultural problems usually consisted of a visit to the farm with technical personnel, e.g. the District Agriculturist, a Highways Engineer, etc. They also included meetings of the farmer with the Minister and Deputy Minister of Agriculture, and program planning meetings of the program committee of the large zone or agricultural committees. There were 40 visits made, with an attendance of 394.

Co-ordination

An Interdivision Co-ordination meeting with Agricultural Extension was attended, with a total attendance of 40. Five meetings were held with Agricultural Economics and Program Development to co-ordinate work between the two divisions in C.D. 14. Total attendance was 43.

One Interdepartmental Co-ordination meeting of the Technical Panel was held at which the inventory for C.D. 14 was discussed and progress to date reported. Several members of the Technical Panel raised suggestions for areas within government departments which would benefit from joint planning and co-ordination. Many informal meetings were held with attendance from two to six to discuss planning on specific problems. One meeting was held with an attendance of 25.

The balance of the co-ordination was meetings with other government departments to discuss problems in co-ordinating activities at both regional and provincial levels. Departments involved were: The University of Alberta, Departments of Lands and Forests, Highways, Public Health, Public Welfare, Municipal Affairs, Education, Industry & Labour, and Youth, as well as all

Divisions of the Department of Agriculture. Eighty-seven meetings were held with an attendance of 379.

Planning meetings regarding the Home Visitors program were held with the Department of Public Health and the Department of Public Welfare concerning this program for working with low socio-economic families. A project to cover the cost of this program was submitted and it is hoped it will be initiated early in 1967. Eighteen meetings were held with an attendance of 77.

Counselling — Program of Land Purchasing and Farm Enlargement

Requests were received from 32 families to have their land purchased. Of these, ten were in the green zone, 1 in the brown zone, and 21 in the yellow zone. The criteria for farms purchased in the yellow zone were: isolated quarter sections, or farms on which the farmer had a doctor's certificate that he was unable to continue farming. In all cases, the families received general counselling and were offered the opportunity for educational programs through which they could learn a skill.

The disposition of these families was as follows:

- I. Nine families requested a straight purchase. In all cases, this was either forestry land or isolated quarters and the people were involved in another occupation or were widowed or retired.
- II. Two families with land in the green zone were, at the close of the year, in the process of relocating and building up farms in the yellow zone.
- III. Six families entered the labour field in alternate occupations. These were men with skill training, or those going into an occupation that they could handle without additional training.
- IV. Four families were eligible for early retirement due to age and ill health.
- V. Two families were on training programs, one man taking apprenticeship training in heavy duty mechanics and one man taking the horticulture course at Olds Agricultural and Vocational College.
- VI. In addition, nine other families were looking seriously at the possibility of up-grading and training. At the year end, they were still being counselled in a general way in the Edson office and also counselled specifically by the appropriate agency when conditioned to seek this advanced counselling service. The Canada Manpower Centre and A.V.T. were working in this area. Excellent co-operation existed with both Alberta Vocational Training and the Agricultural and Vocational Colleges as well as the Apprenticeship Board.
- VII. In addition to the older persons undertaking training, five young farmers applied to commence agricultural education at Olds or Vermilion and it is hoped to interest still more future farmers in this training. This was under Program 3 of A.V.T.

VIII. Counselling was given to five farm families requesting assistance in planning for their farming operation, and requests were being received from farmers for help in obtaining lands already purchased by ARDA in an attempt to enlarge their farming operations. The District Agriculturist was actively involved in assisting farmers with their planning.

It appeared that educational programs for people relocating were the most permanent answer to assisting them to economic independence. This was not an easy step where the trainee lacked not only skills, but basic schooling as well. It required considerable counselling and conditioning, and while progress was slow it went ahead.

Other Activities

In addition to the foregoing, Assistance has been given in activities of the Division of Extension and conferences and symposiums arranged by the University. Assistance was given in organizing the farm management school held in Evansburg in the winter of 1965-66, and the one held in Edson this winter. Eighteen Farm Units were in second year at Evansburg. Farm Economics and Extension worked with these schools.

The staff participated in the final day of the In-Service Training Course at Penhold by demonstrating the types of leadership being used in C.D. 14. They also were responsible for a portion of the Departmental Conference, discussing at that time, educational programs available for farm people.

The staff participated in the Conference on Human Resource Development and the symposium on Slow Growing Areas held at Banff. The area is presently participating in a research project on the mobility of farm families. A sample of families undertaking various types of rehabilitation were being interviewed and it was felt this information would be useful in working with families in the future.

Summary of 1966 Activities

Meetings:—Meetings for the purpose of disseminating information — 171 meetings with total attendance of 3,446
—Meetings for the purpose of co-ordination — 112 meetings with total attendance of 564

Interviews:

Counselling —

Tourism and Recreation	119
Youth	76
Land Purchase	130
Rehabilitation	125
Education	220
D.A.	50
	<hr/> 720

Co-ordination —

ARDA General	50
Land Clearing	93
Drainage	26
Tourism and Recreation	120
Youth	40
Land Purchase	20
Rehabilitation	15
Education	50
D.A.	28
Program for Low Economic Families	30

472

Dissemination of Information —

ARDA General	750
Land Clearing	64
Drainage	50
Youth	114
Education	30
D.A.	120

1,128

2,320

Miscellaneous —

Office calls but not interviews, e.g. bulletins, arranging appointments, etc.	336
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336

TOTAL

2,656

Phone Calls —	1,321
Letters —	1,891
Mimeographing —	272 pages — 20,608 sheets

REPORT OF THE ST. PAUL REGIONAL ARDA OFFICE — C.D. 12

The Regional Resource Co-ordinator and Assistant Co-ordinator were not replaced as District Agriculturist and District Home Economist respectively, consequently their time was divided between Extension and ARDA work. Considerable time was spent on working with the Saddle Lake and Goodfish Lake Community Development Committees. Comprehensive outlines were developed and drafted for long term agricultural projects involving the clearing, breaking and general improvement of land for the purpose of establishing community farms, community forage projects and community pastures on Indian Reserves. A brief for the submission of a request for grants to the Provincial ARDA Advisory Committee was being considered at the close of the year.

The project has involved the following technical resource personnel: P.F.R.A.; C.D.A. Research, Lethbridge: Soil Survey and Research Council; Department of Lands and Forests; Indian Affairs; Department of Industry and Development; Local Businessmen; Financial Institutions (Banks, loaning agencies, etc); and Provincial Department of Agriculture — Extension Service and Farm Economics.

The work has consisted in extensive field surveys with inspectors of P.F.R.A., Department of Lands and Forests, Farm Economics Division, the Range Management Specialist from Lethbridge Research Station, and local extension staff.

It has also involved a series of discussion sessions covering the various aspects of farm planning and budgeting and the social implications of the development project. This has been an educational process for the two Community Development Committees as well as the resource people.

Speaking engagements on the philosophy of ARDA, etc., were given at:

Smoky Lake — Town and County Council

Vilna — Chamber of Commerce, District Organizations and

Interested Farmers

Maloy — F.U.A.

Council M.D. of Bonnyville and Local Improvement Advisory

Board

St. Paul County Advisory Board

Smoky Lake County Advisory Board

Elk Point Home and School

The Regional Resource Co-ordinator and his assistant participated in the following:

1. Attended meeting with Preventive Social Service — St. Paul, Elk Point, Lac la Biche and Bonnyville.
2. A half-hour TV Program, on C.K.S.A. Lloydminster was presented, specifically dealing with Program Planning in C.D. 12.
3. Spent some time visiting and acquainting ourselves with C.D. 12 area.
4. Made individual contacts in the area informing people about ARDA.
5. Took part in a tour of the Inter Lake area in Manitoba to observe how ARDA projects are being initiated and carried through.
6. Investigations have been made at V.L.A. and F.C.C. offices with regards to assistance available to farm families on sub-marginal units.

LIAISON AND PUBLIC RELATIONS OFFICER

The Liaison and Public Relations Officer started September 20th. Time was spent becoming familiar with the programs in both C.D. 14 and 12; and also attending several meetings involving ARDA work directly or indirectly. These were: Agrologists Conference, Farm Labour Seminar — Red Deer, Indian Affairs Branch — Edmonton, Radio & Information Branch — Edmonton, Indian Affairs Branch Conference, and others.

The following News Releases, Studies, and Pamphlets were prepared:

News Releases —

Major ARDA Report — Released

ARDA Philosophy

Lieutenant Governor Grant MacEwan Addresses 300 Agrol-
gists at 3-day Conference
Population Facts, Not Prophecies C.D. 12
ARDA and Agriculture C.D. 12
ARDA — The Process of Social Action in Community and
Area Development
Area Rehabilitation and Development Act "ARDA"
Goals in the Development Phase of an Area Rural Develop-
ment Region

Studies —

Structuring Co-ordinated Policy Decisions for All Agencies
Directly Concerned in Total Area Development
Analytical Study of ARDA Advisory Committee Meeting
Minutes from Inception (incomplete at the close of the
year)

Pamphlet —

ARDA Design and Philosophy

IRRIGATION POLICY COMMITTEE

The findings of five research studies relating to economics, administration, condition of works, and drainage needs of irrigation projects were released during the year. Public meetings were called to review the reports and to hear recommendations on policy. Briefs were requested and received from irrigation officials, municipal bodies, community associations, and individuals. Recommendations on changes in irrigation policy were prepared for presentation to the Minister of Agriculture early in 1967.

OFFICIAL TRUSTEE AND COLONIZATION MANAGER

Administrative control of the United and Lethbridge Northern Irrigation Districts was retained as in past years by the Government during 1966. Priority attention was given to administrative organization with the view to the districts possibly returning to self-directed administrations. Dr. P. M. Sauder was replaced by C. J. McAndrews as official Trustee and Colonization Manager of the L.N.I.D., and W. Robertson was appointed District Manager following the demise of J. Mould. Mr. McAndrews was assigned like responsibilities on the United Irrigation Districts, and Arvin Nielson was appointed to District Manager. The Macleod Irrigation District was not operative during 1966.

As the districts are incorporated under the Irrigation Districts Act they report annually in detail under separate covers.

GENERAL

The development of assignments listed but not reported were being planned but were not active in 1966. A Supervisor of Municipal-Agricultural Programs for instance was not as yet employed and the program while planned was not implemented.

All contacts and communications were pleasant and appreciated by staff of the Division.

Report of the Veterinary Services Division

J. G. O'DONOGHUE, V.S., D.V.M., Director
H. N. VANCE, V.S., D.V.M., M.Sc., Assistant Director, Head,
Laboratory Services
G. R. WHENHAM, V.S., D.V.M., Assistant, Director, Head, Field Services
*F E. GRAESSER, B.S.A., V.S., D.V.M., Supervisor,
Edmonton Laboratory Histopathologist
*G. S. WILTON, V.S., D.V.M., Head, Animal Pathology
*J. HOWELL, V.S., D.V.M., Head, Poultry Pathology
E. W. GILCHRIST, M.R.C.V.S., Veterinary Pathologist
G. G. KLAVANO, B.Sc., V.S., D.V.M., Veterinary Pathologist
*W. N. HARRIES, M.R.C.V.S., Head, Lethbridge Laboratory
G. A. CHALMERS, V.S., D.V.M., Veterinary Pathologist
J. P. BEST, V.S., D.V.M., Head, Veterinary Inspection
W. P. BRISBANE, V.S., D.V.M., Head, Communicable Diseases
M. W. STONE, B.Sc., M.R.C.V.S., Veterinary Pathologist
K. R. MacDONALD, V.S., D.V.M., Emergency Measures Officer
C. DAVIDSON, B.Sc., Laboratory Scientist
S. A. RAWLUK, B.Sc., Laboratory Scientist
J. D. WOOD, B.Sc., Laboratory Scientist

FUR FARMS BRANCH

R. W. GILLIES, Supervisor

* Head of Section

A. GENERAL

Department re-organization brought the Fur Farms Branch into the Division. Internal administrative changes were minor. With expansion through the two regional laboratories established, planning was directed towards the consolidation and efficient functioning of facilities and staff.

Dr. H. N. Vance was awarded a Master of Science degree in Veterinary Pathology by Colorado State University.

Dr. M. W. Stone joined our staff in February and assumed responsibility for herd health programs.

Dr. W. J. Dorward after six months as a pathologist at Lethbridge resigned. Professional staff vacancies exist and recruitment of suitable personnel continued to be difficult.

Laboratory services processed 24,000 specimens. The Edmonton Laboratory was equipped to make full use of Fluorescent Antibody Techniques in disease diagnoses. The Veterinary Diagnostic Laboratory at Lethbridge completed its first year of operation and has been well received by the district it serves. A second regional laboratory for the Peace River was approved. After a detailed survey, Fairview was selected as the site best suited for its purpose and function. The building will be similar to the Lethbridge laboratory and the Department of Public Works has indicated a completion date of late 1967. The planning for the Agriculture and Wildlife Consolidated Laboratories, a ten storey structure to be built at 68 Avenue and 116 Street, was completed. Tenders were called for in late December.

Field Services were marked by the inspection of a total of 980,169 at "D", "E", and "F" Auction Markets. The increased volume of cattle sales in the fall months was largely responsible.

The phasing out of compulsory vaccination for the control of Bovine Brucellosis continued. As of December 31, 24 municipalities had reverted to voluntary programs. The total of 462,728 of calves vaccinated was a decrease from the 471,762 vaccinated in 1965. With the co-operation of Fish and Wildlife, limited surveys of big game animals were made for the possible presence of *Brucella abortus* infection in these species.

Considerable time was devoted to the study of Bovine Vibriosis, with special emphasis on the possible usefulness of the new vaccines that were available on special permit from Federal authorities. Field trials were initiated that will continue into 1967.

Approximately 250,000 cattle graze some type of community pasture each summer. To improve disease prevention measures, the feasibility of veterinary inspection and supervision of grazing reserves was investigated and a pilot program drafted for 1967.

In co-operation with the Poultry Branch, a health program for turkey breeder flocks, particularly those engaged in the export of hatching eggs, was developed. To protect the export market, 29,000 serological tests were made on turkey blood specimens. The program is intended to put health standards on a more meaningful basis, and it is hoped to expand and promote this market for the poultry industry.

The Director, as a member, attended the second meeting of the Advisory Board to the Western Veterinary College, Saskatoon, Sask. The College accepted its second freshmen class. Of the 63 students enrolled in the two years, 28 are Albertans. Close liaison with the College was maintained for the benefits to be derived from technical and scientific areas.

In general, it was a good year from a disease viewpoint. Scours in beef calves, a serious problem in recent years, showed a low incidence. Later calvings and good weather were believed to be important factors. Pneumonia in pre and post weaning periods was more prevalent than usual, but was not of serious consequence.

The high incidence of Western Equine Encephalomyelitis in 1965 was not repeated. Weather not conducive to large mosquito populations may have been a factor.

Rabies was diagnosed in a cow in the Bashaw district in September. The collection of suspect specimens from wildlife and domestic animals from the area have been negative for the disease. Whether or not this case is related to the rabies situation in Saskatchewan cannot be stated. The incidence of rabies in Saskatchewan declined slightly, and the disease was not known to occur as close to the Alberta border as it did in 1965. The Central Rabies Control Committee, with the co-operation of other Branches, Departments and Agencies, was active. Skunk control in eastern sections was promoted, the significant fox population surveyed, the information bulletin, "The Striped Skunk", prepared by Fish and Wildlife, distributed and the De-

partment of Health made pre-exposure immunization of "high risk" personnel available on a voluntary basis.

The report of the predator study in Rochester areas, supported by the Division in the interest of rabies control, and a part of extensive wildlife studies under the auspices of the University of Wisconsin, indicated that coyotes range a distance of 25 to 30 miles. A single coyote may travel up to 400 miles.

Regulations Regarding the Destruction and Disposal of Dead Animals were established. These require the safe disposal of dead animals, and that all raw meat salvaged from dead animals be sterilized by manufacturing processes. An essential with this material being utilized in animal feeds.

Added responsibilities came with the amendments to the University Act governing the acquisition and care of dogs and laboratory animals. University Vivariums are now subject to a twice-a-year inspection by the Deputy Minister of Health and the Director.

The Division continued to co-operate with other divisions, departments and agencies in all matters that related to diseases of animals and human health. The assistance of Extension, Animal Industry and Plant Industry Division, Lands and Forests and Fish and Wildlife is gratefully acknowledged. Appreciation is expressed to the Department of Health, Public Health Laboratory, Veterinarians, Feed Industry, and Municipal officials.

More detailed information is given in the following report of Laboratory and Field Services activities. Additional technical data will be included in the Division Report.

B. FIELD SERVICES

Field activities of the Division cover the administration of official legislative programs, such as Brucellosis Control, Veterinary Inspection Services, Livestock Health Programs, the investigation of specific disease problems field study projects and extension.

SUMMARY OF ACTIVITIES

Field Investigations		Inspections	
Cattle	86	Livestock Markets	145
Swine	28	Stockyards	280
Sheep	6	Livestock Medicines	297
Horses	4	Slaughterhouses	2
Poultry	23	Swine R.O.P. Bonus	18
Fur Animals	12	Swine Herd Health	138
Wildlife	6	Supp. S.H.H.P.	17
Alberta E.M.O.	3	TOTAL	897
TOTAL	168		
Meetings		Lectures	
Brucellosis	19	University	35
Domestic Animals	23	Vocational Colleges	0
Poultry	11	Others	13
Professional	47	Alberta E.M.O.	7
Others	46	TOTAL	55
Community Pastures	3		
TOTAL	172	Individual Farm Visits	341

VETERINARY EDUCATION

Six years are required to complete the course in Veterinary Medicine following Senior Matriculation. This consists of two years of pre-veterinary studies available at Universities or Junior Colleges in Alberta followed by the four year professional course, obtainable in Saskatchewan, Ontario or Quebec.

Pre-Veterinary Students in Alberta:

	1st Year	2nd Year
University of Alberta	23	16
University of Calgary	12	7
Lethbridge Junior College	5	1
Camrose Junior College	4	1
Medicine Hat Junior College	1	2
Red Deer Junior College	1	1
TOTAL	46	28

Albertans Attending Veterinary Colleges:

	1st	2nd	3rd	4th	5th*
Saskatchewan	15	13			
Ontario	10	2	3	4	10
Quebec					1
TOTAL	25	15	3	4	11

*In 1966, Ontario changed to a four year curriculum.

Practising Veterinarians

The number of veterinarians in private practice at the end of the year was 127 large animal practitioners in 77 practices and 23 small animal practitioners in 10 clinics, a total of 150 practitioners. 43 large animal clinics were in operation. 17 veterinarians left private practice but all were replaced through new graduates and new arrivals.

BRUCELLOSIS CONTROL

All of Alberta, with the exception of twenty-four municipalities, was under the Brucellosis Restricted Area Plan with compulsory vaccination of heifer calves. The twenty-four areas completed five years of compulsory vaccination following the Federal Health of Animals blood test, and reverted to voluntary vaccination on the farms.

The Federal Health of Animals Branch had 93 Brucellosis Certified Areas, and 28 of these were recertified for a further three year period. Recertification of areas is based on the low percentage of reactors uncovered on routine check testing and the retesting of previously infected herds.

(a) Calfhood Vaccination

462,728 calves were vaccinated with Strain 19 vaccine. The age for vaccination was 120 to 270 days, and these calves were classed as "Official Vaccinates" and eligible for export purposes. The United States' demand for Alberta cattle continued and necessitated the issuing of duplicate vaccination certificates for

20,000 cattle. Since 1945, over five million heifer calves have been vaccinated for Brucellosis in Alberta.

(b) Brucellosis Restricted Areas

Seventeen areas reverted to voluntary vaccination on the farm during the year, making a total of 24 municipalities on voluntary vaccination. The Municipal Districts of Rocky View No. 44, Sturgeon No. 90, Lamont No. 82, and Foothills No. 31; the Counties of Strathcona No. 20, Vermilion River No. 24, Ponoka No. 3, Camrose No. 22, Leduc No. 25, Red Deer No. 23, Grande Prairie No. 1, Vulcan No. 2, and Minburn No. 27; and Improvement Districts No. 42, 46, 50, 58, 65, and 68 were deleted from the Brucellosis Restricted Area Plan. The above areas had completed five years of vaccination following Federal blood testing. Vaccination of heifer calves remained compulsory at the Class "D", "E", and "F" Stockyards in these areas, with the cost borne by the Department. The majority of cattlemen continued to vaccinate the replacement heifers in the voluntary areas.

The vaccination program was carried out by 147 veterinarians, and 64 Agricultural Fieldmen appointed Inspectors under the Livestock Diseases Act.

COMMUNICABLE DISEASES

(a) Vibriosis

A trial was conducted in a beef herd with the new Vibriosis Bacterin to determine its efficacy and any possible disadvantages. Further investigational work will be done with the bacterin since results in this herd were most encouraging.

(b) Disease Reporting Statistics

To complement information gathered from laboratory submissions, and direct from livestock owners, a procedure for morbidity and mortality reporting was maintained. Selected veterinary practices co-operated representing approximately 10% of veterinary service calls made in the year. The system did not provide for the reporting of losses where veterinarians were not consulted.

Monthly returns were processed covering calls to 10,148 premises.

A new disease reporting system was discussed and a list of reportable diseases will be instituted to provide more complete information on the most important communicable diseases, other than the named diseases of the Federal Health of Animals Branch.

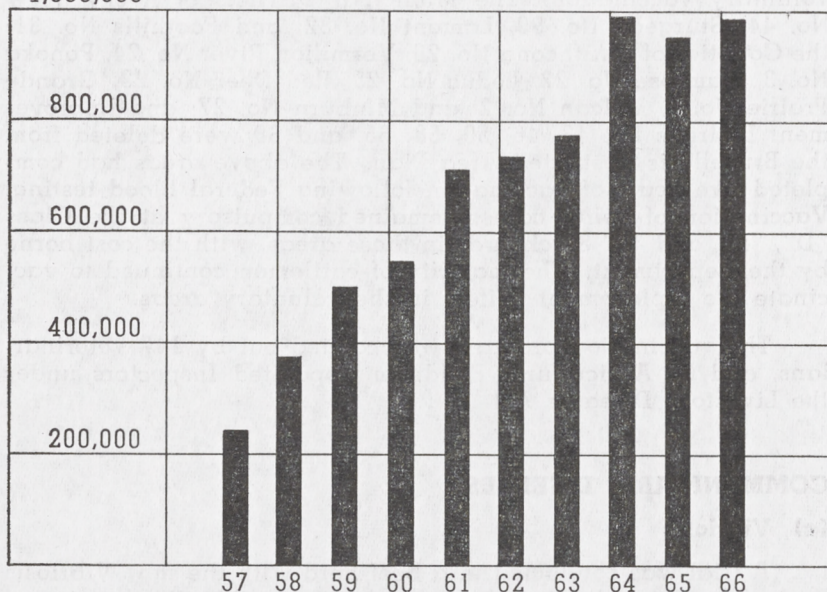
VETERINARY INSPECTION SECTION

During 1966, 54 Class "D", 2 Class "E" and 4 Class "F" Stockyards were under veterinary inspection. A total of 980,189 animals were inspected at these yards.

A new Class "D" Stockyard was opened at Rocky Mountain House. The one at Berwyn did not operate during the year.

The accompanying chart illustrates the volume of livestock inspected at all auction markets under supervision.

Livestock Inspected at Class "D", "E" and "F" Stockyards
1,000,000



Rejections totaled 8,952. Diseases of cattle most frequently encountered were cancer-eye, mastitis and lump-jaw. In swine, rhinitis and mange accounted for most of the rejections.

The regulations were amended to prohibit the sale of very young calves, and Section 18 was rescinded.

35 Class "C" and 223 Class "G" Stockyards were also under supervision.

COMMUNITY PASTURES INSPECTION

The success of our veterinary inspection programme at auction markets led to the realization that a similar programme at community pastures would be of considerable assistance in reducing the spread of livestock diseases in areas served by pastures.

To gather information on this subject, veterinarians of the Field Service spent several days at the Provincial Grazing Reserves and talked to as many of the patrons as possible and to members of the Department of Lands and Forests responsible for the administration of the Reserves.

After this, proposed regulations were written along with a list of recommendations to assist in improving the general health of animals in pastures.

During the fall and early winter months, these proposals were explained to patrons of the reserves at six different meetings.

The proposed regulations and recommendations were revised pending the Minister's further consideration.

EDUCATIONAL COURSES

The Division took an active part in the preparation and presentation of short courses. The Sixth Annual Feed Industry Conference was held in Edmonton in co-operation with the Feed Industry and the Department of Extension of the University of Alberta. It was well attended by Feed Industry personnel from inside and outside the province. The Division co-operated with the Poultry Branch of the Animal Industry Division in presenting the Poultry Industry Conference held in Calgary. This conference has supplanted the Hatcherymen's Short Course which was held for about fifteen years previously. Assistance was also given to the Western Stock Growers Association in planning the third annual Stockmen's Short Course held at the Banff School of Fine Arts.

LIVESTOCK MEDICINE REGULATIONS

Three hundred and seventy-five outlets were licensed during 1966, a decrease of twelve from the previous year. Three hundred and one inspections of licensed outlets and premises of new applicants were made. Some irregularities were corrected on the spot. These consisted largely of possession of out-dated medicines and holding medicines on open shelves. A small stock of livestock medicines were being offered for sale by two former licensees. This practice was halted. One wholesale company was restrained for selling medicine not allowed under the regulations. Other complaints were investigated with negative results.

The Advisory Committee met once during the year to consider new applicants and discuss changes in the regulations. Several changes were recommended and will be acted upon.

Biologics, antibiotics, scour treatments and swine anemia preparations comprised the greater part of retail sales of scheduled items.

Under Poultry Vaccine Regulations, licenses to sell Infectious Bronchitis and Newcastle Disease Vaccines were issued to 26 Pharmacists, 11 Hatcheries and 15 Veterinarians.

LICENSING OF SLAUGHTERHOUSES AND HUMANE SLAUGHTER

One hundred and three slaughterhouses were issued licenses.

RABIES CONTROL

Stocks of containers and history sheets were maintained and replenished at Rabies Control Depots. The depots are operated

by Pest Control Offices, District Agriculturists and Forestry offices.

SWINE HERD HEALTH PROGRAM

The Swine Herd Health Program had a very successful year and interest in the program grew steadily. At the commencement of the year, 32 herds were enrolled on the program and this figure stood at 40 at the end of the year. A number of commercial herds were admitted following a recommendation at the June meeting of the Advisory Committee that within certain limitations grade herds would be accepted for enrollment.

Operation of the program has involved unannounced herd inspections and examination at the Provincial Veterinary Laboratories of material submitted from the herds. This included necropsies and a proportion of heads and lungs from hogs marketed during the year. The blood testing for Brucellosis and Leptospirosis, commenced in 1965, was completed and a proportion of samples were also forwarded to the Federal Laboratory at Hull, Quebec to be tested for the presence of Haemagglutinating Encephalomyelitis Virus (HEV) antibodies, a disease which usually strikes suckling pigs and an outbreak of which was diagnosed on three farms. In addition to the above, further supplementary inspections were carried out when a disease problem occurred in a herd. In two herds this involved tuberculin testing of all the breeding stock and as a result five animals were suspected of being infected. Slaughter of these animals was recommended with the aim of eradicating the disease from the herd. The other investigations involved scours in young pigs and a number of swabs were submitted to bacteriology during the year. Baby pigs and weaner scours was a problem confronting all hog raisers. In view of this a project was set up in an attempt to identify the actual organism involved on each farm and work on this will continue in the hope that some preventative measures can be evolved. In addition to this a general survey for the presence of vibronic dysentery organisms was commenced.

Summary of activities of S.H.H.P. during 1966

Total enrollment at January 1st, 1966	32
Number of herd inspections	135
Supplementary inspections	17
Necropsies performed at the Laboratory	105
Necropsies performed by practitioners	29
Heads and lungs examined	706
Total blood samples drawn	102
Total animals tuberculin tested	177
Total swabs examined	45
Total enrollment at December 31st, 1966	40

AGRICULTURAL EMERGENCY MEASURES

The Alberta Department of Agriculture Emergency Measures Plan is in the hands of Alberta E.M.O. planners and will be issued early in the new year. A Manual of Organization, Operating Procedures, and Administrative Standing Orders was completed for each of the Zone Headquarters. The Department of Agriculture Resources Book was compiled early in the year. Copies were sent to all assigned personnel, were added to records at all Headquarters and copies were issued to all District Agricul-

turists in the province as they will act as local agricultural advisers to Unit or Municipal Government if the need should arise.

Lectures were given by the Deputy Minister, the Director and the Emergency Planning Officer to Orientation, Radiological and nurses courses at the Alberta Civil Defence School. In co-operation with Federal Agricultural staff, the E.P.O. planned and directed Agriculture's role in Exercise Tocsin 66. The E.P.O. attended the Exercise carried out by Public Emergency Health and Welfare at Didsbury in June. Additional professional staff (four) received training at the Canadian Civil Defence College, Arnprior, Ontario. Five outstanding farmers selected from throughout the province attended a special Orientation Course at Arnprior and four more candidates were selected for a course in 1967. The E.P.O. attended the NSOPO and Teaching Techniques courses at Arnprior. Thirty-one meetings were attended by E.P.O. in regard to planning and three field trips were undertaken to update records and familiarize emergency staff with up-dated records.

"Emergency identity cards" were issued to all assigned personnel.

C. LABORATORY SERVICES

The primary responsibility of the laboratory division was to provide a diagnostic service to the livestock industry. The laboratories at Edmonton and Lethbridge provided equipment and specially trained personnel not available in private clinics or practices. This enabled us to use specialized diagnostic techniques most essential as a second line of defence against livestock diseases.

Improvements in techniques, staffing, and equipment were made to fully utilize the research information becoming available to us. Of particular note was the acquisition of fluorescent antibody equipment which will assume a very important role in our diagnostic procedures, and has already proven of great value. Dr. Klavano attended a three-week course on fluorescent antibody techniques at the U.S. Communicable Disease Centre. To keep abreast of the medical sciences and new diagnostic methods, a regular program of seminars and case conferences was carried on for the professional staff. A library of 20 periodicals in veterinary medicine and allied fields also aided us in meeting this responsibility.

The laboratory division attempted to have its staff members spend a portion of their time doing field investigations with the field division, with other branches of government, and with veterinary practitioners. This is important as a further service to livestock owners and veterinary practitioners and in maintaining contact with changes in the industry. Other responsibilities undertaken included some extension work in the form of meetings, radio tapes, field days, and press releases.

The assistant director, laboratory services, was chairman of the planning committee for the Alberta Agriculture and Wildlife Consolidated Laboratories. A great deal of time was spent on co-ordinating planning for the building, and on detailed planning for the veterinary facilities.

EDMONTON LABORATORY

A total of 56,877 specimens representing 6,539 consignments were examined in 1966. The animal section handled 9,419 specimens from 3,775 premises, and the poultry section 6,504 specimens from 1,816 premises.

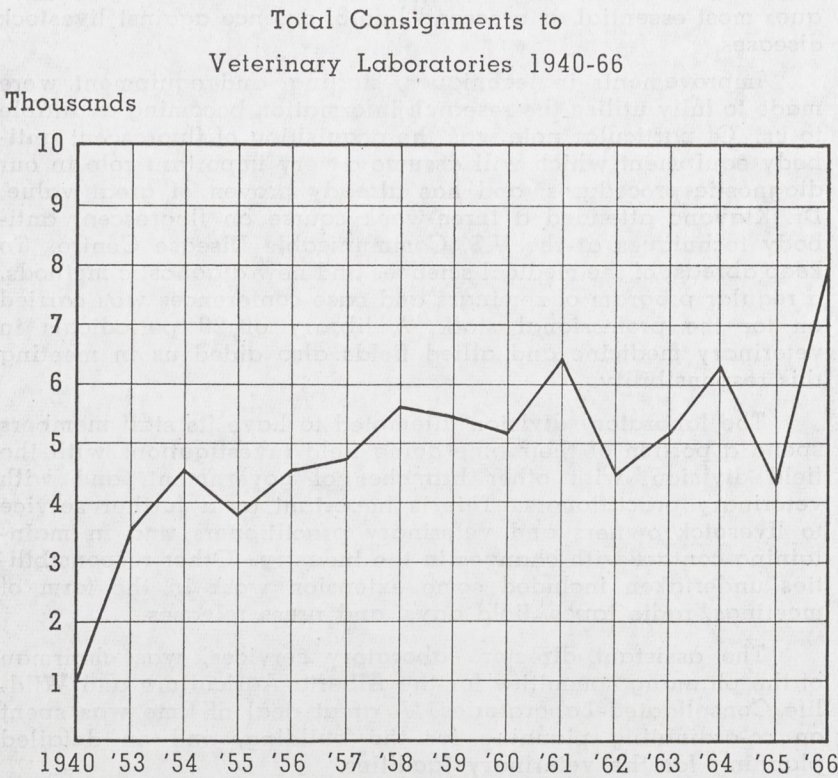
LETHBRIDGE LABORATORY

The Lethbridge regional diagnostic laboratory completed its first full year of operation. Stockmen and veterinarians in Southern Alberta took advantage of the service immediately and submitted 2,595 specimens from 1,539 premises.

FAIRVIEW LABORATORY

After careful examination of the factors involved, Fairview was recommended as the best site for the laboratory to serve the Peace River area. The building will be very similar to the Lethbridge Laboratory. The Department of Public Works has nearly completed detailed plans and it is hoped that the Laboratory will be ready to function in 1967. Staff is being trained at the Edmonton Laboratory at the present time.

The following graph indicates the general increase in the numbers of submissions and specimens examined during the history of the laboratories.



Following is a list of the domestic species and numbers of specimens examined from each. While these accounted for the bulk of the work load, a wide variety of wildlife species were also examined. More than half of the Edmonton total is accounted for by blood and milk samples.

	Edmonton	Lethbridge
Cattle	6,928	578
Swine	3,198	391
Sheep	167	22
Horse	161	36
Canine	767	88
Feline	275	48
Chickens	4,118	907
Turkeys	1,840	359
Bloods	avian 30,323	—
	animal 4,219	—
Others	avian 508	51
	animal 1,778	115
TOTAL	54,282	2,595

PROMINENT DISEASES

The following chart lists the more important diseases in various species.

Cattle:

	Edmonton	Lethbridge
Blackleg	32	6
Bronchopneumonia	141	7
Colibacillosis	56	19
Johne's Disease	4	—
Lungworm	7	3
Malignant Edema	35	3
Mixed Clost. Infection	103	11
Pulmonary Emphysema	7	3
Virus Diarrhea	12	4
Vitamin A Deficiency	14	—
White Muscle Disease	31	—
Inf. Bov. Rhinotracheitis	1	4

Swine:

	Edmonton	Lethbridge
Anemia	18	5
Bronchopneumonia	106	4
E. Coli Infection	51	34
Edema Disease	45	5
Encephalitis	26	1
Enteritis	46	27
Erysipelas	47	3
Gastro-Enteritis	49	1
Mulberry Heart Disease	36	5
Necrotic Enteritis	12	2
Vibronic Dysentery	38	14

Poultry:

	Edmonton	Lethbridge
Air Sac Infection	103	3
Capillaria Worms	51	5
Coliform Septicemia	123	34
Coccidiosis	94	28
Deficiency Diseases	100	—
Leukosis	277	34

Sheep:

	Edmonton	Lethbridge
Pneumonia	27	6
Enterotoxemia	7	—

Canine:

	Edmonton	Lethbridge
Distemper	23	6
Inf. Canine Hepatitis	3	—
Pneumonia	14	—

Enteric diseases and pneumonias account for most losses in domestic animals. Proper feeding and management could prevent many of these cases.

In cattle, shipping fever is probably the single most important cause of losses. Calf scours was a very minor problem compared to the previous two years. Virus diarrhea, polioencephalomalacia, and infectious bovine rhinotracheitis were all troublesome problems because of the lack of effective control measures, and in fact general understanding of these diseases. Lead was again the most common poison found in cattle.

Colibacillosis and nutritional factors caused the majority of losses in swine. Mulberry heart disease was particularly troublesome because of the lack of effective control measures, and some outbreaks of vibronic dysentery were also difficult to bring under control.

Strongyle worm infections were very common in horses, as were distemper infections in dogs and cats. No distemper was diagnosed in mink for the first time since the laboratory opened.

Leukosis was present in almost all chicken flocks in Alberta and the overall losses were considerable. Although in general these losses were spread over the whole province, a few flocks have suffered particularly severely.

Air sac infection in poults was the most prominent disease in turkeys. Salmonella infections and transmissible enteritis, which until recently were responsible for huge losses, were not common.

The most prominent and costly disease in chicken broilers was coliform septicemia. This disease is proving extremely difficult to control.

Nutritional deficiencies of young turkeys and broilers have been seen more frequently than should be expected from flocks being fed commercial rations.

SPECIAL INVESTIGATIONS

Disease problems often arise which cannot be investigated adequately by routine procedures. The following special investigations were undertaken:

- Newcastle disease survey
- Turkey health pilot program
- Calf scours
- Wildlife disease serology

E. coli serotyping
 Swine vibrio survey
 Mycoplasma infections in swine
 Bighorn sheep losses
 Clostridium infections of cattle

SEROLOGY

The following chart outlines the serological tests conducted and includes the sera sent to the Alberta Public Health Laboratory for *Leptospira* and Arbor virus tests.

1966	Bovine	Porcine	Equine	Buffalo	Moose	Elk	Deer	Canine	Goat	Poultry
Brucellosis Provincial	63	111	—	—	4	1	4	—	1	—
Brucellosis Federal	2,906	—	—	417	6	3	1	—	—	—
Vibrio Mucus	479	—	—	—	—	—	—	—	—	—
Leptospirosis	65	140	—	—	—	—	8	1	—	—
Equine Encephalomyelitis	—	—	9	—	—	—	—	—	—	—
P.P.L.O.	—	—	—	—	—	—	—	—	—	7,919
Pullorum	—	—	—	—	—	—	—	—	—	17
Newcastle	—	—	—	—	—	—	—	—	—	180
Salmonella Typhimurium	—	—	—	—	—	—	—	—	—	22,207
TOTAL	3,513	259	9	417	10	4	13	1	1	30,323
GRAND TOTAL										34,542

HISTOPATHOLOGY SECTION

This section is concerned primarily with the preparation and examination of sections from diseased tissues. Many disease conditions produce characteristic changes in the tissues which may be recognized only by a microscopic examination, and frequently a diagnosis of a specific disease can be made only by this means. The identification and classification of the many types of tumors which are encountered also is the responsibility of this section.

In addition to the histopathological work, this section produces photographic slides and prints for use within the Branch, as well as preserving and mounting gross specimens for display and educational purposes.

Sections prepared and examined:

Domestic animals	4,962
Poultry	3,096
Fur bearing and miscellaneous	684
TOTAL	8,742

MICROBIOLOGY SECTION

(a) Bacteriology

Most of the animal and poultry accessions were routinely examined for pathogenic bacteria. The bacteriology section received 3,118 specimens from the animal pathologists, and 5,061 specimens from the poultry pathologists. The examinations carried out included bacteriological, serological, microscopic,

chemical, animal inoculation, and other procedures. The following table illustrates the work performed:

Bacteriological Examinations	6,538
Fecal Examinations	122
Blood Counts	109
Skin Scrapings	36
Urinalysis	44
Cuboni Pregnancy Tests	13
Fluorescent Tests	151
TOTAL Specimens Received	8,179

Other specimens examined included:

Milk Samples	3,124
Fluff Samples	97
Intestinal Contents	67
Miscellaneous	532

The chart below indicates the work done on reproductive diseases, revealing findings from fetus examinations and vibrio tampon tests:

Fetuses	Total	Vibrio	Brucella	Strep	Coryne	Others	Negative
Bovine	331	12	—	8	14	13	284
Porcine	62	—	—	4	—	—	58
Ovine	16	5	—	—	—	—	11
Equine	19	—	—	—	—	9	10

A total of 780 vibrio tampons were examined. There were 189 positive reactions, representing 65 premises. These results are in addition to vibriosis diagnosis made based on isolation of the organism from fetuses.

(b) Mastitis Testing

Three thousand, one hundred and twenty-four milk samples were examined by the California Mastitis Test, by leukocyte counts and by culture. Other special techniques including coagulase tests on hemolytic *Staphylococcus* organisms and antibiotic sensitivity tests on significant pathogens were performed.

(c) Virology

The table indicates the examinations undertaken and the isolations made.

Suspected	No. Examined	Positive
Infectious Laryngotracheitis	3	—
Infectious Bronchitis Virus	139	35
Transmissible Enteritis	22	4
Newcastle Disease	14	—
PPLO Chickens	188	41
PPLO Turkeys	193	73
PPLO Porcine	201	34
PPLO Ovine	2	—
PPLO Feline	1	—
PPLO Bovine	9	—
PPLO Rats	6	—
PPLO Milk	2	—
Avian Encephalomyelitis Virus	9	—
Psittacosis	4	—
Ornithosis	12	—
Embryo Lethal Agent	93	4
Pox	26	8
Experimental Pox	1	—
Sporadic Bovine Encephalomyelitis	1	—
Enzootic Abortion of Ewes	1	—

Influenza (Equine)	1	1
Virus Pneumonia (Equine)	1	1
Newcastle HI	188	19
Experimental N.C.D.	2	1
PPLO HI	21	11
TOTAL	1,140	232
Hemagglutination Tests	182	
	<u>1,322</u>	

PARASITOLOGY

Nineteen sixty-six saw a 60% increase in the number of submissions from animals for parasitological examination. There were 420 submissions with almost 1,200 samples.

Verminous pneumonia continues to take its annual toll of cattle in spite of the fact that there are effective drugs available. More publicity needs to be given to treatment and control of this disease.

Positive diagnosis of coccidiosis was made on 67 flocks of poultry. This represents a sharp increase. These outbreaks occur most commonly in started pullets in the 16-20 week range.

Capillaria species continue to be troublesome on some premises. Diagnosis was made in 51 flocks. Judging by the number of premises from which a diagnosis is made in successive flocks, the cleaning of the houses between crops leaves much to be desired.

TOXICOLOGY

A total of 875 laboratory specimens were submitted for toxicological examinations. Most of these were animal and poultry specimens taken from cases of suspected poisoning. The remainder consisted of water and feed samples which were suspected of producing harmful effects in livestock. Strychnine and lead were the most frequently found poisons.

CORRESPONDENCE AND COMMUNICATIONS

Full use of the services of the Veterinary Branch requires correspondence with veterinarians, livestock owners or their agents concerning diagnosis and recommendations. Such communications included: (1965 figures in brackets)

Letters	20,651	(24,975)
News Releases	21	(46)
Radio and T.V. Interviews	25	(20)
Transparencies and Slides	154	(151)
Photographic Prints	40	(124)
Scientific Papers*	4	(4)

- *1. "Hypertrophic Pulmonary Osteoarthropathy in a Mink". G. S. Wilton and F. E. Graesser. Canadian Veterinary Journal. (In Press)
2. "A Suspected Case of Mercury Poisoning in Swine". W. N. Harries, H. N. Vance, and W. T. Nagge. Ibid. (In Press)

3. "Clostridium Perfringens as a Pathogen for Cattle — A Literature Review". H. N. Vance. Canadian Journal of Comparative Medicine. (In Press)
4. "A Survey of the Bovine Alimentary Tract for Clostridium Perfringens". H. N. Vance. Ibid. (In press)

Several thousand bulletins on veterinary subjects were distributed, in addition to which there were a number of presentations by staff veterinarians to various professional and farm group meetings.

FUR FARM BRANCH

R. W. GILLIES, Supervisor

GENERAL

The mink pelt market for the season 1965-66 was firm and the fur farmer enjoyed a good selling season. The pelt market was up from 15 to 20% over the previous year, with a record 191,471 pelts returning nearly 3¾ million dollars, for an all time record pelt return in Alberta.

HEALTH

No contagious disease was reported this season, which proves the fur farmers have finally adopted protective vaccination. Early kit losses were above normal, but extra females carried over, should result in the same number of animals being raised to maturity as in the past season.

ASSOCIATION, SHOWS, FIELD DAYS & EXTENSION

This branch continues to assist the very active Fur Breeders Associations in all of their many annual activities and functions. The mink breeders and the chinchilla breeders conduct annual field days and shows and regular meetings were held in the different areas.

The Supervisor was afforded the opportunity, in March of this year, to visit the Experimental Mink Stations at Washington State University in Pullman — the Oregon State University at Corvallis — the Seattle Fur Exchange in Seattle, and was also granted the privilege of attending the Canada Mink Breeders Annual Meeting in Winnipeg in September.

OFFICE AND FIELD PROGRAM

Under the Departmental re-organization, this branch, as of April 1st, was united and administered under the Veterinary Services Division. The same office procedure, field inspection, visitation and liaison between departments, has been continued and maintained, as in former years. Four Departmental bulletins on various phases of the mink industry were issued to the fur farmers during the year.

CURRENT COMMENTS

Some of the more successful Alberta fur ranchers have, or are planning to move to the West Coast, but the ranches vacated are being bought up and occupied by New Citizens or recent

Immigrants. Many of these people are proving to be very successful mink farmers. The European people are settling in the Slave Lake area and Lebanese are attracted to the Lac la Biche district. With ready sources of feed and reasonable real-estate value of land, these people can become established in Northern Alberta with a minimum of capital.

The fur trade has always had a history of fluctuating markets and the current pelting season is no exception. After the market being strong a year ago it has taken a dive in the early sales of December 1966 and indications are that the market is down 25 to 30% from a year ago. With everything the fur farmer uses increasing in price, this current drop will be very critical to many. Raisers of quality mink should weather the unexpected and unexplained drop in price, but those with average or below average quality will be hard pressed to get costs of production back.

Chinchilla — is still a puzzle, since indications are that more chinchilla pelts should be reaching the fur trade from Alberta.

Rabbits for Meat and Fur — A Dominion Government inspected rabbit eviscerating plant is to be opened in Calgary early in 1967. This should give this industry a chance to establish and prove if it can develop into an economic commercial venture.

Beaver — A concerted effort has been made to try and promote the sale of live beaver in Alberta and this Branch has issued a number of releases by way of the news media, warning people to approach this fur-bearer with caution and discretion.

FUR FARM ANNUAL REPORT

FUR FARM STATISTICS TO AUGUST 31, 1966

Number of Animals Declared on Fur Farms in Alberta 1965 - 66

Kind of Animal	Total No. of Animals	Av. Value Per Animal Sept. 1965	Total Valuation
Mink Standard	111,577	\$20.00	\$2,231,540
Mink Mutation	156,639	19.00	2,976,141
Chinchilla	11,221	18.00	201,978
Fox	2	20.00	40
Nutria	162	5.00	810
Miscellaneous	—	—	—
TOTAL Declared	279,601		\$5,410,509

Number Pelted in Alberta

Mink Standard	84,424	\$20.00	\$1,688,480
Mink Mutation	107,047	19.00	2,033,893
Chinchilla	1,700	18.00	30,600
Fox	2	20.00	40
Nutria	89	5.00	445
Miscellaneous	—	—	—
TOTAL Pelted	193,262		\$3,753,458

Number of Live Animals Exported

Mink Standard	634	\$60.00	38,040
Mink Mutation	1,618	60.00	97,080
Chinchilla	735	50.00	36,750
Miscellaneous	—		—
TOTAL Live Exports	2,987		\$ 171,870
TOTAL EXPORTS	196,249		\$3,925,328

Number of Animals Retained

	1965-66	1964-65	1963-64
Mink Standard	26,519	26,009	23,327
Mink Mutation	47,974	37,187	27,337
Chinchilla	8,786	7,403	5,127
Fox	—	22	12
Nutria	73	27	125
Miscellaneous	—	39	53
TOTAL Retained	83,352	70,687	55,981

Fur Farm Licenses

	1965-66	1964-65	1963-64
Mink	249	249	252
Mink, Fox and Miscellaneous	3	2	3
Chinchilla	181	123	102
Nutria	2	2	4
Chinchilla and Nutria	0	0	1
Miscellaneous	0	1	2
TOTAL Licenses	435	377	364

Mink pelt production 1959 to 1965

Year	Total Pelts	Value
1965-66	191,471	3,721,385.00
1964-65	186,181	3,009,066.00
1963-64	181,698	3,240,234.00
1962-63	156,189	2,577,110.00
1961-62	151,416	2,536,990.00
1960-61	146,590	2,233,895.00
1959-60	135,343	2,684,500.00

Report of the Water Resources Division

R. E. BAILEY, B.Sc., P.Eng., Director

W. SOLODZUK, B.Sc., P.Eng., Chief Engineer

IN MEMORIAM

Mr. F. L. Grindley, B.A., B.Sc., P.Eng., former Director

Mr. A. G. Underhill, B.Sc., P.Eng., District Engineer, Calgary

The sudden passing of Mr. F. L. Grindley on July 15, 1966 and the tragic accidental death of Mr. A. G. Underhill on March 28, 1966 came as a great shock and tremendous loss to our organization. The Division pays tribute to the memory of these two outstanding engineers who served so faithfully and well to safeguard one of our most valuable resources.

ORGANIZATION

On April 1, 1966 in keeping with departmental policy, the disciplines with "water" as the most active common denominator were amalgamated into a new structure. The former Colonization Branch and the Water Resources Branch are now designated as the Water Resources Division, with former sections making up branches within the Division. The new structure is appropriate as all programs in the water resources field are co-ordinated by this new agency. This co-ordination ensures that overall government policy objectives are reached without duplication and provides further co-ordination with other agencies involved in the water management field.

To carry out the provincial program of fostering an orderly development of available water resources to meet all the foreseeable short and long term needs of the province, a whole range of professional skills are required. To meet this requirement, the new structure is orientated through which it would be possible to assemble the necessary skills and work together.

The following chart shows the organizational framework of the Division and the relative positions of all branches. Basically, the branches within the office of the Director are responsible for administrative services while the other branches are referred to as the "specialty" branches. The operation of the Division will be through regions administered by Regional Directors answering to the Director at Provincial Headquarters. The new look in organization and administration permits co-ordination, complementary and supplementary, among the various branches. With the appointment of a Regional Director, the Lethbridge Region became operational. The Edmonton, Peace River and Calgary regions are being established as working units, however, all services are still handled through Provincial Headquarters. The responsibilities of the individual branches are outlined in more detail in following chapters, together with a report on their activities during the period under review. As this is a first attempt in reporting under the new structure, it is prepared on a Branch basis with a summary of regional activities.

Legislation changed the Colonization Manager to Land Manager and the activities of this corporate body are serviced by the Division and reported under the heading of Land Management Branch.

Provincial, Interprovincial and International Streams

The Division continued to expand its activities to formulate the objectives of the PRIME program. For background information readers are referred to the Annual Report for the year 1965 wherein the concepts of this water plan for Alberta are outlined in detail.

The scope of the Division's attention to the administration of the water in the province continued on a broad scale, extending from the provincial needs to interprovincial and national considerations. As a result of difficulties encountered by the Prairie Provinces Water Board in processing Alberta's request for increased allocations to protect the requirements for irrigation and other water licenses, the Board requested Alberta and Saskatchewan to review their positions. A complete report on this subject is contained in the Annual Report for the year 1965. During the past year active negotiations between this province and Saskatchewan were conducted to reach an agreement regarding the apportionment of waters on interprovincial streams. Further negotiations are anticipated during the coming year.

There were no problems or complaints on any of the international streams in 1966. An adequate amount of water was available to all water users on both sides of the International Boundary.

Plans for the Saskatchewan-Nelson Basin Study were held in abeyance pending the announcement of Manitoba's position in this worthwhile joint venture of the Federal Government and the three prairie provinces. It was to have been a study of the inventory of all waters, existing uses, storage sites, and diversions within the Saskatchewan-Nelson drainage basin which encompasses all three provinces.

Continuing Policies

In addition to the complete outline of policies and programs in the Annual Report for 1965, the established programs of seepage, alkali control, land development, extension and drainage continued to promote increased efficiency of the irrigation systems in southern Alberta. The awareness of the need for a new policy for the rehabilitation and administration of the province's irrigation projects continued and The Irrigation Policy Committee reviewed all submissions culminating with a general meeting in Taber. The recommendations of the Irrigation Policy Committee, together with the possibility of a cost-sharing arrangement, according to national, provincial and local benefit, is in the final stages of completion.

EXTERNAL ADMINISTRATION BRANCH

The primary function of this Branch is to administer all governing legislation, Division and Government policies, all

financial operations and property control. All Acts, policies and programs were reported in the Annual Report for the year 1965 and interested readers are referred to this publication.

Water Rights Section

A total of 171 applications for water rights were received and recorded in 1966. The distribution of these applications as related to drainage basin and purpose is shown in TABLE I.

A total of 171 interim licenses for all purposes were issued during the year.

Irrigation Water Agreements

Water agreements between the Irrigation Districts and the water user are approved, registered and filed in this office. During the year the following water agreements were received:

Bow River Development	36
St. Mary and Milk Rivers Development	99
Eastern Irrigation District	50

TABLE II shows the major Irrigation Districts in Alberta and the areas that actually received water during the year 1965.

Groundwater and Technical Services

Groundwater Section.

General

Administration of the Ground Water Control Act involves licensing of all water well drillers in the province and the collection and tabulation of completed reports on each well. Inspection are carried out relative to complaints, flowing wells and report submissions. Other duties of the Section include field inspections of proposed subdivisions, industrial wells and municipal well development programs.

PURPOSE OF APPLICATION

TABLE I

1966

Drainage Basin	Dom.	Mun.	Irr.	Ind.	Other	Total
Athabasca River	4	3	1	1		9
Bow River	5	2	—	1		8
Churchill River	1	—	—	—		1
Forty Mile Lake	—	3	—	—		3
Great Sandhills	2	1	—	—		3
Lodge Creek	3	—	—	—		3
Manito Lake	7	2	—	6		15
Many Island Lake	2	1	—	—		3
McGregor Lake	1	—	—	—		1
North Saskatchewan River	13	9	2	5		29
Oldman River	10	3	—	—		13
Pakowki Lake	4	—	—	—		4
Peace River	2	1	3	—		6
Red Deer River	23	15	4	4		46
Seven Persons Creek	5	5	—	—		10
South Saskatchewan River	3	3	—	—		6
Sullivan Lake	2	3	—	2		7
Tide Lake	3	1	—	—		4
TOTALS	90	52	10	19		171

Table 2
STATISTICS IN CONNECTION WITH THE MAJOR IRRIGATION DISTRICTS IN ALBERTA

Name of District	Constructed Area	Receiving Water in 1965	Source of Supply
St. Mary and Milk Rivers Development	176,757.0 Acres	165,000.0 Acres	St. Mary River
Magrath Irrigation District	8,506.0 Acres	3,000.0 Acres	All through the
Raymond Irrigation District	21,000.0 Acres	15,000.0 Acres	works of the
Taber Irrigation District	52,821.0 Acres	26,005.0 Acres	S.M.M.R.D.
Western Irrigation District	150,000.0 Acres	2,750.0 Acres	Bow River
Eastern Irrigation District	200,000.0 Acres	194,824.0 Acres	Bow River
Bow River Development (Federal)	94,000.0 Acres	39,224.0 Acres	Bow River
Bow River Development (Provincial)	25,000.0 Acres	5,283.0 Acres	Bow River
Mountain View Irrigation District	3,719.0 Acres	2,789.0 Acres	Belly River
Leavitt Irrigation District	4,511.0 Acres	4,511.0 Acres	Belly River
Aetna Irrigation District	6,672.0 Acres	2,523.0 Acres	Belly River
United Irrigation District	33,972.0 Acres	9,805.0 Acres	Belly River
Lethbridge Northern Irrigation District	91,000.0 Acres	22,778.0 Acres	Oldman River
Macleod Irrigation District	N O T O P E R A T I N G		Oldman River
Ross Creek Irrigation District	2,069.0 Acres	1,500.0 Acres	Gros Ventre Creek
TOTALS	870,027.0 Acres	494,992.0 Acres	

During the past year over 500 personal contacts were made with water well drillers in an effort to improve the quantity and quality of the well reports. All of the report submissions were forwarded to the Research Council of Alberta to aid in their groundwater studies.

A water well drillers directory was published and distributed to all drillers, all District Agriculturists and other interested people such as commercial firms and government agencies.

In the field of extension work, talks were given at nine water supply schools presented at various locations throughout the province. The programs were arranged by the various District Agriculturists for the benefit of local farmers and well drillers. A talk was also given at the annual Alberta Water Well Drilling Association Convention in the interests of education and better public relations.

A pamphlet entitled "Farm Water Wells" was published and nearly 5,000 copies have been distributed to farmers and water well drillers.

Two agricultural community water supply programs were initiated under the Federal-Provincial-Municipal Emergency Well Development Policy. Both wells are located in Improvement District No. 11.

Water Well Drillers

The following is a summary of information relative to the water well drilling industry and shows a comparison with figures for 1965:

	1965	1966
Number of licensed water well drillers	233	212
full time	94	95
part time	74	78
occasional	57	36
out of business	8	3
Number of drilling rigs	282	250
rotary	123	120
cable tool	87	82
jetting	30	23
boring	42	25
Number of drilling reports received	2,020	1,850

Hydrographic Survey

Ten lakes were sounded which brings the total to 80 completions. The depths are drafted in the form of contour maps and are useful in determining storage capacities and also of interest in water conservation, recreation and industrial uses.

Geodetic Survey and Lake Levels

Permanent iron bench marks were set and elevations established at thirteen lakes. All elevations were based on geodetic datum to conform with the Geologic Survey of Canada.

The level of most lakes in the province remained relatively unchanged. Lac Ste. Anne and Lesser Slave Lake lowered ap-

proximately two feet from the previous year and are considered satisfactory.

The following list of major lakes shows a comparison of 1966 median levels with those of the past four years:

	1962	1963	1964	1965	1966
Gull	89.67	89.33	89.16	90.24	90.01
Sylvan	71.77	71.77	71.42	72.32	72.60
Cooking	96.20	96.68	95.91	96.46	96.76
Buffalo	83.50	83.60	82.45	84.07	83.75
Wabamun	70.72	70.87	70.57	72.52	72.83
Pigeon	99.28	99.26	99.11	100.26	100.24
Lac Ste Anne	97.35	98.20	97.37	99.80	97.85
Lac La Biche	98.74	97.66	95.48	97.48	96.93
Lesser Slave	92.48	93.59	94.77	96.33	94.00

Property Control

The largest principle function of this section in the field of right-of-way work including contacts, negotiations and completing of transactions relating to rights-of-way, easements, damage claims and public relations work with construction activity. The work of this Section increased with commencement of initial studies on the announced PRIME program, continued work on the Battersea Drain of the Lethbridge Northern Irrigation District, the commencement of construction on the Monarch Drain in the L.N.I.D., and the commencement of construction on the Rolling Hills Drain in the Eastern Irrigation District. The work of procuring right-of-way and easements on the canals of the St. Mary and Milk Rivers Development continued at the same rate as during the past few years.

Personnel in the Section are located in the Lethbridge Regional Office and Provincial Headquarters.

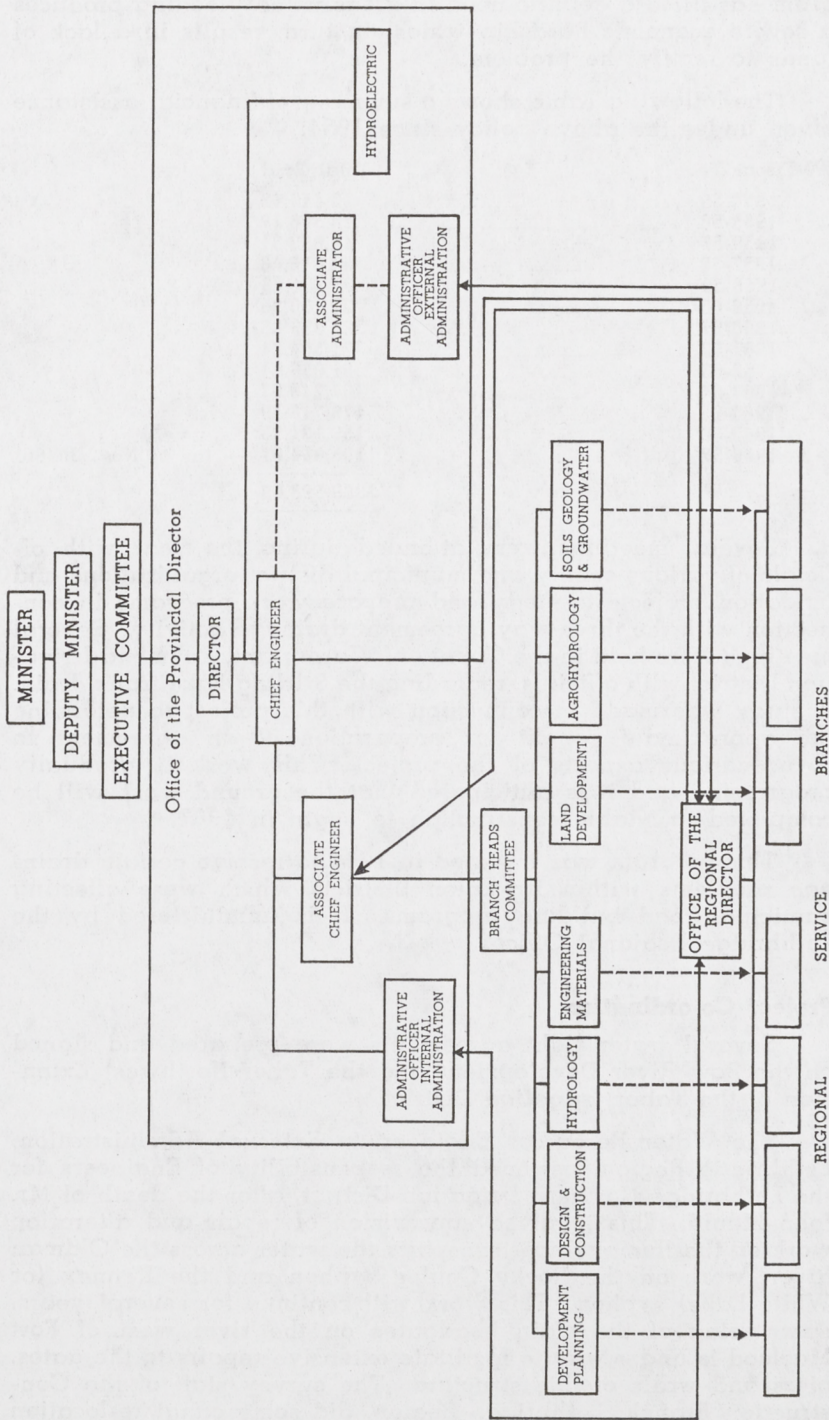
Right-of-way plans for the irrigation districts and for other purposes are processed and approved by this office before proceeding to the Land Titles Office for registration. During the year the following right-of-way plans were registered:

St. Mary and Milk River Development	10
Bow River Development	7
Lethbridge Northern Irrigation District	3
Taber Irrigation District	3
Mountain View Irrigation District	2
Leavitt Irrigation District	1
Magrath Irrigation District	1
Other purposes	12

The micro-filming of right-of-way plans was completed during the year. All right-of-way plans for the irrigation districts are now on micro-film.

Financial and Statute Operations

The financial assistance policy to local governments continued to be an active program. Since flood control is the primary objective most of the projects were initiated in the north and north-central areas. A financial assistance program was instituted in 1966 whereby the cost of projects in improvement districts north of the 55th parallel be shared equally between our depart-



ment and the Northern Alberta Development Council. The program has filled a definite need in areas where flooding produces a severe economic hardship which, in turn, results in a lack of funds to rectify the problem.

The following Table shows a summary of financial assistance given under the above policy since 1954:

Fiscal Year	Total Paid
1954-55	\$ 2,449.42
1955-56	10,566.19
1956-57	46,833.51
1957-58	54,616.48
1958-59	61,131.28
1959-60	31,130.95
1960-61	29,353.33
1961-62	21,554.24
1962-63	61,056.04
1963-64	107,243.07
1964-65	178,718.19
1965-66	159,131.98
1966-67	105,814.01 — (as of Nov. 30/66)
	<u>\$869,598.69</u>

Several meetings were attended during the year with officials of various county and municipal district organizations and irrigation projects to study and prepare work programs in connection with the three-way agreement drainage activity. Several meetings were held in the County of Warner and Raymond Irrigation District with officials, regarding the Stirling Lake trunk drain. A study was made in connection with this project to determine the approximate benefit for preparation of an agreement to cover various aspects of the project. This work is gradually progressing and it is anticipated that the ground work will be completed to enable construction to begin in 1967.

This program was initiated in 1964 to resolve certain drainage problems within irrigation districts which were affecting municipal road building programs. It is administered by the Lethbridge Regional Office.

Project Co-ordination

Several water right agreements were prepared and signed on the Bow River Development and the Taber Northwest Extension of the Taber Irrigation District.

The Water Resources Engineer, in External Administration, Lethbridge Region, assumed the responsibility of Engineers for the Lethbridge Northern Irrigation District, after the death of Mr. John Mould. This involved supervision of repair and alteration work on the flume which transports the water across the Oldman River, work on the Rocky Coulee syphon and the Kennex (or White Lake) syphon. This work will continue for several years. Dewatering of the main headgates on the river west of Fort Macleod is under way to facilitate extensive repairs to the gates, piers and walls of this structure. The survey staff of the Construction Branch, Lethbridge Region, did some canal re-location surveys in connection with some of the original canals on this project.

During the irrigation season of 1966 the Water Resources Division, Lethbridge Region, operated and maintained the Belly River diversion and the main canal supplying water to Mountain View, Leavitt and Aetna Irrigation Districts.

Due to heavy rains during the growing season, irrigation demand was light and the canal was operated at much less than full capacity all summer. Snow melt and rainfall runoff peak flows did not reach flood proportions to tax wasteways or under-drains. There was adequate flow in the Belly River all season to supply all users and it was possible to maintain Driggs Lake near full with little demand on storage.

The rebuilding of Lee Creek syphon crossing, started in 1965, was completed before the irrigation season in 1966. This structure is a 1500 foot long — 42 inch diameter woodstove pipe across the creek valley. It is supported on short piling most of the way, but for the actual creek crossing, seven spans of precast concrete decking were placed on the old piers. The Soils, Geology and Groundwater Branch carried out extensive seepage investigations along the canal.

INTERNAL ADMINISTRATION BRANCH

This Branch is responsible for providing the Division with the following major administrative services:

- (a) Accounting
- (b) Appropriation control
- (c) Procurement of Materials and Equipment
- (d) Personnel Administration
- (e) Data Systems Programming
- (f) Contract Procedures
- (g) Filing and Records Management.

WATER POWER

North Saskatchewan River

Brazeau Dam — permission was granted on November 30, 1966 to raise the crest elevation of the dam to approximately 3200 feet above mean sea level. Number two unit was installed and expected to be in operation in 1966 but due to minor adjustment delays the 190,000 kilowatt machine will not be in operation until late January 1967.

Design and planning was done in connection with raising the full supply level of the reservoir to an elevation of 3190 feet above mean sea level, which would increase the usable storage to approximately 690,000 acre feet. This work is to commence in the summer of 1967.

Big Horn Site — investigations of this site, located some 260 miles upstream of Edmonton, which places it 110 miles upstream of the point where the Brazeau River meets the North Saskatchewan, were completed in 1966. Decisions as to feasibility and timing of construction should be decided before the end of 1967.

Diversion of the North Saskatchewan to the Brazeau by way of Chambers Creek was found to be uneconomical.

Bow River — problems have been encountered due to methods of excavation for diversions and this problem should be corrected in 1967.

Extension studies and surveys have been started downstream of the Bassano Dam near Eyremore in order to determine the best method of obtaining better storage and control for Eastern Irrigation District with the possibility of a power development as an additional benefit that might be available during the winter months.

Athabasca and Peace Rivers — no new work has been done on either of these rivers during the past year.

Vermilion Reservoir — runoff was light in 1966 and no serious spring problems were encountered. However, we are still having serious problems with farmers downstream from the dam in allowing water to be passed in the late fall in order to protect the structure.

HYDROLOGY

General

The Hydrology Branch continued with the basic programs of watershed research, river regime research and application and applied research, and the welcomed increase in professional staff enabled an intensification and sophistication of these programs. Although areas of endeavor remained essentially the same, the difference in quantity and quality of reports and studies was immediately apparent.

As in 1965, major applied research efforts were centered in two fields — watershed research and river regime studies.

1. Watershed Research — considerable progress has been made in the Spring Creek Watershed Research Basin, the objectives of which were detailed in the 1965 report. The initial phase of road construction is finished and early in 1967 these roads will be gravelled providing, to a high degree, all-weather access to key points within the basin. Similarly the basic hydrologic network of observation stations is practically complete and useful data is presently being compiled. Future innovations will concentrate on special rather than on general instrumentation and studies.

Formal and informal co-operation with other Provincial and Dominion departments engaged in various watershed studies in the province is increasing. This co-operation considerably enhances experience and knowledge gained from any one study.

2. River Regime Research — The program for evaluating the regime behaviour of gravel-bed rivers in Alberta continued in 1966. Completion of field surveys on eight Alberta rivers this past summer brings to 25 the total of such studies done during the last six years. A highly significant step in the progress of these studies was reached during the year with the compilation of all previous survey data together into a consistent form suitable for publication.

A new phase in this work has been embarked upon. Probable consequences to the river of a proposed flood control dam on the Pembina near Entwistle are being calculated on the basis of experience gained from previous river studies. The river regime studies have thus entered into the practical stage.

Precipitation

Generally, the past year was notably uneventful in that it was a year of averages. Not many areas received intense rain-falls and consequently little in the way of flooding occurred except in a few isolated instances. The heavy rain that did occur came for the most part in August. The yearly flows of most rivers were normal.

The northern Peace River region and High Prairie area experienced continuing dry conditions, particularly in the spring. Similar dry spring conditions, two inches below normal, existed in the Elk Point, Vermilion and Lloydminster regions. A large area including Morinville, Edmonton, Calmar, Wetaskiwin, Camrose and Viking received considerably less than normal precipitation in the early part of the growing season. Lacombe had such a deficit of spring precipitation — 4.5 inches — that even the heavy rains later did not bring its yearly total up to normal.

The situation was the reverse in southern Alberta where spring, summer and yearly totals generally exceeded average values by a substantial amount.

PRECIPITATION IN INCHES

Station	1966			Difference from normal		
	April May June	April May June July	Oct. 65 - Sept. 66	April May June July	April May June July	Oct. 65 - Sept. 66
Beaverlodge, Grande Prairie	4.2	6.9	19.1	— .5	— .2	+1.5
Fairview, Peace River, High Prairie, Rycroft, McLennan	3.0	5.2	13.5	—1.6	—1.6	—3.1
Whitecourt, Edson	5.0	10.2	20.5	—1.3	0.0	0.0
Athabasca, Lac La Biche	5.0	7.2	16.2	—0.2	—0.9	—1.9
Iron River, Elk Point, Lloyd- minster, Vermilion	2.7	5.4	12.7	—2.0	—1.8	—3.0
Morinville, Edmonton, Cal- mar, Wetaskiwin, Camrose, Viking	3.4	6.3	16.5	—2.2	—2.6	—1.2
Hughenden, Coronation, Youngstown, Stettler,	3.4	6.6	13.7	—1.9	—0.8	—1.3
Lacombe, Consort	4.9	9.5	18.3	—1.9	—0.1	—0.1
Pine Lake, Penhold, Olds	4.4	9.2	15.4	—0.7	+2.2	+0.3
Three Hills, Drumheller, Hanna, Gleichen	6.9	10.4	15.7	—0.2	+1.0	—2.6
Calgary, High River	8.9	12.8	23.2	+3.1	+5.7	+7.5
Claresholm	6.3	8.6	15.5	+1.0	+2.3	+2.9
Brooks, Winnifred, Foremost, Vauxhall, Warner, Milk River	5.4	7.8	13.6	+0.5	+1.6	+0.5
Medicine Hat, Manyberries Raymond, Lethbridge, Card- ston, Caraway, Fort Macleod	7.0	11.7	20.1	+1.4	+3.1	+2.0

DEVELOPMENT PLANNING BRANCH

The duties of the Development Planning Branch are to present new proposals and conduct investigations which will promote conservation and development of our province's water resources. Generally these responsibilities include:

- (1) Investigations into the soci-economic effects a project will have on an area.
- (2) Studies concerned with developing comprehensive river basin plans which will provide for the optimum use of the existing water in the basin.
- (3) Studies concerned with developing an overall water plan that is flexible enough to permit it to be changed as necessary for the accommodation of various new construction projects as new patterns of resource and social development take place.
- (4) Planning to assure that maximum benefits can be derived from the various developments of our other associated natural resources, and that the maximum social benefits can be derived from water development plans.
- (5) Conducting surveys to locate, establish and determine the information necessary for analysing and recommending priorities for various projects.
- (6) Co-ordination of work from other branches, necessary for the compilation of the final report on a proposed project.

Water resources planning requires the application of the knowledge of the many disciplines encountered in dealing with the various associated resources, and their social and economic implications. It is not economically justifiable to have on staff such a wide range of professionals. However, this Branch provides the frame work which enables the gathering and the co-ordinating of these professional skills from other branches, government departments or consulting firms.

Edmonton Region continued studies on the Pine Creek Sturgeon River, and Vermilion River Basins. On Pine Creek, permanent bench marks have been established to facilitate further work in the area. Preliminary mapping is now complete with possible diversions located.

The Upper Vermilion River Basin is presently being analyzed for storage sites. Possible diversions into the North Saskatchewan system are also being considered.

The Sturgeon River Study is in the preliminary stages with hydrology analysis and storage sites being studied.

An ever increasing awareness of the immense importance of developing, conserving and protecting our water resources, has given impetus to our program. Various new proposals for the development of our water resources have been investigated and an analysis as well as an evaluation of their merits should be completed this coming year.

The following table outlines the projects under active considerations together with a progress estimate in the various phases of studies. This chart is applicable to the Development Planning Branch and the Engineering Materials Branch. To readers who are interested in additional background information concerning these projects are referred to the Annual Report for the year 1965.

ENGINEERING MATERIALS BRANCH

The Engineering Materials Branch is responsible for initiating and conducting a provincial program for soils investigations, necessary for the design and construction of dams, spillways, diversion tunnels, outlet works, coffer dams, irrigation canals and related structures.

Soils investigations include:

- (a) Field reconnaissance surveys for the location of dam sites and spillways.
- (b) Drilling programs for the determination of foundation conditions.
- (c) Laboratory testing for the determination of the strength parameters used in foundation design.

Designs will be carried out in consultation with consulting engineers. However, due to lack of staff, designs on major dams are presently being carried out by consulting firms; but the construction section of the Engineering Materials Branch will be responsible for the quality control of earth placement, and the instrumentation necessary for determining settlement, movement, or pore pressure build-up occurring during and after construction.

The preceding chart outlines progress to date on all projects that have been completed this year or are being investigated.

DESIGN AND CONSTRUCTION BRANCH

The Design and Construction Branch is responsible for all construction and design activity of this Division. The work of this branch includes the programming of all surveys and the preparation of design and construction reports on proposed projects in the various categories of irrigation, drainage, flood control, water development and conservation works. Regional projects are initiated and supervised through regions administered by Regional Directors and co-ordinated by Provincial Headquarters. Provincial programs are accomplished by Provincial Headquarters.

In the Edmonton and Peace River Regions the major projects were those which were initiated under the financial assistance policy and the Northern Development Council. The following tabulations summarize these projects.

Summary of Projects Initiated under the Financial Assistance Policy and Northern Development Council

Project	Purpose	Location	Percentage Completed 1966
Manning — Notikewin	Drainage	I.D. 138	100
Eureka River	Flood Control	I.D. 139	95
Worsley Reservoir	Conservation	I.D. 139	100
Valhalla	Flood Control	County 1	100
City of Grande Prairie			
— Bear Creek	Flood Control		80
— Wapiti River	River Control		100
Wembley	Flood Control	County 1	100
Spirit River Drainage	Drainage	M.D. 133	100
Ksituan	Flood Control	I.D. 134	100

North Tangent Drain	Drainage	I.D. 132	100
Tees Dam	Recreation	County 14	100
Deep Creek Flood Control ..	Flood Control	I.D. 134	20
Kleskun Lake	Flood Control	County 1	60
Coote Lake — Eaglesham ...	Flood Control	I.D. 132	100
Boreen Project	Flood Control	I.D. 132	75
Rabbit Creek Flood Control ..	Flood Control	I.D. 139	15
Bremont Project	Drainage	M.D. 130	100
North Manning Drainage	Drainage	I.D. 138	5
Marie-Reine Project	Drainage	I.D. 131	100
Foster Complaint	Drainage	M.D. 92	35
Dapp Creek	Flood Control	M.D. 92	80
Barthead West	Drainage	County 11	100
Manola Drainage	Drainage	County 11	95
Hess Complaint	Drainage	M.D. 92	100
Wakamao Lake	Flood Control	M.D. 92	30
Bear Creek	Flood Control	M.D. 92	100
Jackfish Creek	Flood Control	M.D. 87	40
Glendon	Flood Control	M.D. 87	100
LaCorey	Flood Control	M.D. 87	95
Devonia Lake	Flood Control	County 24	95
Elk Point	Flood Control	County 19	90
Tindastall St. I .....	.....	County 23	100
Open Creek	Conservation	Rimbey Fish and Game ...	95
Muskeg Creek	Conservation	County 10	50

Summary of Provincial Projects

Project	Purpose	Location	Percentage Completed 1966
Buck Lake	Lake Stabilization	County 10	100
Pembina River	Flood Control	M.D. 92 and County 11	95
East Prairie River	Flood Control	I.D. 125	95
West Prairie River	Flood Control	I.D. 125	35
Klein Lake	Conservation	I.D. 50	100
Sundre (Red Deer River)	River Control	County 17	75

Construction proposals throughout the Irrigation Projects falls under the Lethbridge Regional Office and a very active year was experienced. The Battersea Drain, a major drainage project in the Lethbridge Northern Irrigation District was completed this year with the spillway into the Oldman River being completed in November. In co-operation with the County of Lethbridge, under the three-way agreement, additional control works were accomplished to report a successful venture in reclaiming agricultural lands.

Engineering and survey assistance was again provided to the older irrigation districts for several lateral relocations, irrigation, and drainage problems. The majority of this work was performed in the Lethbridge Northern Irrigation District.

Construction started on the Monarch Drain and further surveys and design were undertaken for the proposed Stirling Trunk Drain in the Raymond Irrigation District, and also for the Malloy Drain in the Lethbridge-Coaldale Irrigation District. Surveys, design and cost estimates were completed for proposed surface and outlet drainage in the six-mile Coulee drainage basin.

In co-operation with the Soils, Geology, and Groundwater Branch, and the Economics Division, a drainage study of the Lethbridge Northern Irrigation District was undertaken for the Irrigation Policy Committee. An estimate of construction, maintenance and operation costs of outlet drainage was prepared.

Construction commenced on the Rolling Hills Drain in September with the majority of the excavation completed by the end of the year. This three-way agreement project between the County of Newell, Eastern Irrigation District, and the Province will assist in reclamation and provide a drainage outlet for many acres of land in the Rolling Hills area.

Surveys and technical assistance were completed on 55 miles of road drainage within the County of Newell. Two main trunk outlets were surveyed and estimates prepared, to provide an outlet for road drains throughout the County. 9.6 miles of polyethylene lining was installed, which was a decrease from other years. Due to weather conditions, only 400 feet was placed this fall, two miles was prepared for placing next spring.

Concrete lining, a complete new phase of lining, was undertaken this year. This spring the Division installed two miles of concrete lined canal by the slip form method. The Water Resources staff made and installed the checks and turnout structures while construction was being carried out. This type of lining worked out well as it eliminated 9 wooden structures, cuts maintenance costs and reclaimed land for farm production. The laying of approximately 1200 feet of concrete ditch for the Taber Irrigation District, was surveyed and supervised. There was about 200 feet of concrete slip form lined spillway installed on the Monarch Drain outlet.

Crews working out of Grassy Lake completed 676 miles of survey including chainage, traverse, profiling, and slope staking. Included in the above figures were 70 miles of drainage surveys for the County of Forty-Mile, M.D. of Taber and the Taber Irrigation District.

In 1966 most of the construction work done on the Bow River Development western block was for drainage and seepage control. About five miles of ditches were lined with buried polyethylene plastic to prevent seepage. Another mile and a half of ditch had banks widened in preparation for this lining and two and a half miles were deepened into less pervious soil to reduce seepage.

Three miles of tailout ditches were constructed to permit greater flexibility in canal operation and to prevent damages caused by overflow to farm lands. A half mile surface drain was constructed and a half mile of pondage dike was rebuilt after being riddled by muskrat burrows.

In irrigation water distribution fourteen farm turnouts were relocated, a quarter mile of new lateral was built and a mile of high-line fill constructed for seven farm deliveries.

The construction program also included the following works within the S.M.R.D. and B.R.D. irrigation projects:

- (a) Canal deepening and relocation
- (b) Installation of tile drains
- (c) Construction of open drains
- (d) Maintenance work to Chin Bridge
- (e) Installation of pre-cast structures, rip rap and Texas gates
- (f) Installation of pumping units to outlets of Lost Lake, B.R.D.

LAND DEVELOPMENT BRANCH

Introduction

During the past year the Land Development Branch had the opportunity to re-examine its role in light of amalgamation with the Water Resources Division. The activities of Branch personnel have not changed to any degree but the interest of individual farmers, irrigation districts, and other personnel of the Division, indicated that this Branch can facilitate water resource development in preparing and aiding farmers to receive maximum benefit from project irrigation and drainage schemes. District Agriculturists took advantage of the services offered by Land Development personnel to aid farmers in surface drainage, irrigation, water erosion, and sprinkler irrigation design.

Land Levelling

There are three main factors that effect the amount of land levelled in any year, namely (1) weather, (2) availability of contractor and (3) farm finances.

The weather limited operations in the spring of 1966 but was ideal in September and October. There was a shortage of contractors for land levelling in the early summer due to activity on road and other construction.

A bumper crop increased the demand for land levelling sharply and should continue into 1967.

In 1966, 302 applications for land development work were received in the Lethbridge region. This necessitated surveying and designing 15,022 acres for construction. Contractors completed 10,398 acres, representing an expenditure by farmers of approximately \$665,000.00 to move about 3,000,000 cubic yards of earth.

LAND LEVELLING TRUST ACCOUNT

The Account experienced a very favourable year. A total revenue of \$62,452.85 was realized with charges (less depreciation) amounting to \$39,986.48 leaving a surplus to cover depreciation and interest of \$22,466.37. The surplus for 1966 is nearly double that of 1965 and as large as realized even in years when more revenue was collected.

In 1957 the Account was transferred from the S.M.R.D. to the Colonization Manager. At that time, the Provincial Treasury advance was \$95,211.01. Since that time an additional \$8,955.55 was advanced for purchase of new equipment. Since 1957 a total of \$56,000.00 has been repaid leaving a balance owing to the Provincial Treasury of \$48,166.56. This is being paid off at the rate of \$10,000.00 per year.

Water Control

To make the best use of levelling it is necessary to follow up with the installation of checks, diversions, and drop structures. Also, to provide a uniform application of water to the field,

border dykes, corrugations, or furrows should be used. Where hay and pasture crops are grown, border dykes are ideal. In the past year 1,565 acres were border dyked and 188 structures were installed. The use of corrugations is on the increase, especially on steeper and less uniform slopes. Corrugating and furrowing are annual operations and a rough estimate of their use would be 10-15 thousand acres of corrugations and 60-70 thousand acres of furrows for row crops.

Sprinkler Irrigation

In co-operation with the Agrohydrology Branch, more emphasis was placed on encouraging farmers to investigate their sprinkler requirements in relation to soil type, crop, and irrigation efficiency. Twenty-four investigations were completed for this purpose.

Land Classification

The inspection of lands to determine their suitability for irrigation was conducted on 270 quarter sections and reports completed on the findings. This information was used by Irrigation Districts and the Irrigation Planning Board to determine the feasibility of proposed projects.

Through agreement, the Land Development Branch assumed the responsibility for surveys and classification reports on the S.M.R.D. as of January 1st, 1966. This is a service to the manager to facilitate requests for reclassification and updating classification lines necessitated by changes in right-of-way and relocation of canals and laterals.

Surface Drainage and Soil Moisture Conservation

District Agriculturists were given assistance in servicing requests for improvements of farm surface drainage, spring flooding, and soil moisture conservation projects. It was found that there are many areas throughout Alberta where land development can facilitate the reclamation and improvement of marginal lands.

Special Studies

In order to keep land development design criteria and recommendations up to date and useful to water users, the Land Development staff have co-operated with other Branches and Departments to initiate studies for this purpose.

In co-operation with the supervisor of community pastures, an area of 26 acres was surveyed, designed and levelled to varying degrees and variations of slope. These different combinations of slope will be irrigated and evaluated to determine irrigation efficiency from the standpoint of water stored in soil for plant use compared with runoff and deep percolation. This project will also facilitate studies on farm head ditch lining and semi-automated structures. After construction of the project it was transferred to the Agrohydrology Branch for instrumentation and commencement of studies.

Approximately 12 acres were designed and constructed for level benches in the Walsh area. The object is to determine differences in yield on the level area compared with the contributing area, due to more efficient use of precipitation. This study has also been assigned to the Agrohydrology Branch with co-operating participation by the land owner and the District Irrigationist.

The effects of fertilizer, manure, zinc sulfate and topsoil on cut areas is being investigated at Lethbridge. One year of results was compiled, however, the significance is doubtful due to a heavy hail storm in June. This study will be continued in 1967.

The Economics Division continued studies of productivity on levelled compared with unlevelled and sprinkled fields in 1966. Irrigation was not widely practiced, but the limited data obtained will be extremely helpful in determining a comparison of production on levelled versus unlevelled fields, with and without irrigation.

Administrative and Planning

Resources Division, the Land Development Branch has become involved, in an advisory capacity, with the Land Utilization Committee and the Alberta Agricultural Co-ordinating Sub-Committee in the Agricultural Engineering Section. A co-ordinating role has also been assigned to the Branch Head pertaining to investigation and reporting on drainage, river courses, and water conservation requirements of lands assigned by the Department of Lands and Forests for homestead purposes.

The year of 1966 will be remembered as a bumper crop year. The main reason for this was that rains were timely. This is supported by the records during the past year from the Irrigation Gauge in that precipitation regularly coincided with forecasts for irrigation requirement.

STATISTICAL SUMMARY

District Irrigationists:

I. Land Levelling	
1. Total acreage of Engineering Surveys	15,022
2. Number of completed designs	492
3. Total acreage land levelled	10,396
4. Average cost per acre	\$64.65
II. Farm Irrigation Systems	
1. Number of acres border dyked	1,565
2. Number of sprinkler investigations and designs	24
III. Land Classification	
1. Number of quarter sections investigated	270

SOILS, GEOLOGY AND GROUNDWATER BRANCH

General Introduction

1966 was particularly significant for the Branch in that services were expanded both geographically and materially. More of the small irrigation districts made use of the services offered by the Branch in drainage investigation and soil classifi-

cation work. Other branches and departments of the Provincial Government are using specialized services offered by the Branch and for the first time, services were used by farmers in the Peace River area. Geographical expansion of services is partially due to amalgamation of the Colonization and Water Resources Branches but more significantly due to the approval of new programs in farm water supply and groundwater development initiated in 1966. The response to these new programs has been such that in the short period since the programs became operational, a large backlog of work already occurred.

Investigational approaches in soil drainage, canal seepage problems and soil classification have taken on a somewhat different approach in that the trend is to investigation of large integrated areas. This new approach has resulted in a more efficient use of both investigational staff and equipment and construction staff carrying out remedial measures.

The investigation of large areas also facilitates work being carried out under the terms of reference in the Irrigation Policy Committee and various A.R.D.A. and P.R.I.M.E. proposals.

Drainage Investigations and Designs

Investigational and design service to the St. Mary Milk Rivers Development and Bow River Development West Block was continued in 1966. Close liaison with the Construction and Design Branch was maintained to ensure optimum benefits from the works undertaken. As in the past, field investigations operated on a year-round basis, stopping only due to inclement weather.

Investigational service to other irrigation districts including the Western Irrigation District, Eastern Irrigation District and Lethbridge Northern Irrigation District was continued on a limited scale. Only the Lethbridge Northern Irrigation District completed re-location projects based on the recommendations of the Branch. It was found there is a reluctance on the part of most districts to become involved in drainage, canal relocating and lining projects until the outcome of new policy and assistance proposals are known.

Several dry land seepage areas throughout the province were investigated, and recommendations to relieve the situation in each case were submitted.

Soil Investigations for Land Classification

Soil investigations to determine if lands are suitable for irrigation use continue to be an important service offered to all irrigation districts, other government agencies and individual farmers. This service was used mainly on the St. Mary Milk Rivers Development and lands associated with this project. Some use of the service was made by the Eastern Irrigation District and the Lethbridge Northern Irrigation District to decide if changes were warranted in irrigable acreage classifications, due to the presence of salts and high groundwater. Several investigations

were completed on projects outside the irrigated areas, for private land owners and other government agencies.

Major soil classifications completed during 1966 were: Foremost, Pakowki, East Warner, and the Raymond Extension east of the town of Raymond. Preliminary planning has been initiated for work on the Red Deer River Project in the vicinity of Hanna for the 1967 season. Field work was completed for investigation of the Pinhorn Pasture area adjacent to the Milk River east of Coutts, Alberta.

Applied Research

An area, representative of many problems related to high groundwater and salt, was chosen for research in the Magrath Irrigation District. Installation of drainage pipe (perforated plastic), monitoring facilities and pump discharge facilities was carried on by Branch personnel in 1966. Success thus far indicates that the work may prove to be a pilot study for extensive private drainage facilities in the irrigation district. The work was done in such a manner as to facilitate the preparation of a research paper.

Tile drainage installed in the Medicine Hat area in the winter of 1965 continued to be monitored. This study could be used as material for a research paper.

International Hydrological Decade

The first part of a \$50,000.00 drilling program has been completed with the expenditure of \$10,000.00 immediately east of Lethbridge. The program thus far has included deep drilling, installation of deep and shallow groundwater piezometers and wells, meteorological installations, and various drainage water recording sites installed by the Federal Department of Mines and Technical Surveys, Water Resources Branch, and the Provincial Water Resources Design and Construction Branch. The overall project is one of the largest of its kind in the world designed to study the complete hydrologic cycle as related to irrigation. Results should prove invaluable in future planning of irrigation and drainage facilities. The Federal Department of Mines and Technical Surveys had previously initiated an irrigation return flow study on the Eastern Irrigation District but have since decided to use the I.H.D. irrigation study basin east of Lethbridge for the required information.

Monitoring of shallow groundwater and its relationship to irrigation water use throughout southern Alberta was continued and is now an approved project under the terms of reference of the I.H.D. The co-operating agency is the Soil Section of the Lethbridge Research Station.

A preliminary visit was made to an I.H.D. Project in the Sturgeon Heights area with the Hydrology Branch. Work in the area will involve supervision of the installation of shallow and deep groundwater testing facilities.

Water Development Program

Dugout tests have, for several years, been carried out throughout the irrigation district of southern Alberta; this service was offered whenever equipment, engaged in drainage investigation, was in the area. Drilling was gradually extended to dry land areas and into the shallow groundwater field. During 1965 shallow groundwater work was carried out in the Milk River and Claresholm areas. As a result of the success and farmer response to this service, a policy of farm water development was proposed. Discussions with the Research Council of Alberta and officials of the Water Well Drillers Association lead to the extension of the program to cover inventory of groundwater in Alberta. The policy, officially instigated early in 1966, has three basic objectives:

1. To gather groundwater information which will complement and supplement existing studies.
2. To carry out an inventory of Alberta's groundwater.
3. To assist farmers in finding a suitable water supply.

Regional Inventory

Buried channels in the Claresholm area were explored so that more detailed information is available to private developers and drillers. Several other sites for intensive exploration in 1967 have been discussed.

Under the terms of reference for the program, the Research Council of Alberta will have the Failing Drill and crew under their supervision for a short period in 1967 as part of the exploration and inventory work.

The program should provide valuable information on groundwater inventory for resource use in licencing and development purposes and will benefit farmers, communities and industry.

Individual Water Development

The service program related to dugouts, dams, springs and shallow groundwater has been received exceptionally well in areas of work such as the Peace River Block and southwest Alberta. Contrary to previous expectations, dugout tests have not proven to be a major part of the program while development of shallow groundwater and springs received the greatest response from those areas serviced.

Water Pollution Sampling

Early in 1966 the Branch was requested by the Groundwater Advisory Committee, to carry out a sampling program of shallow and deep groundwater and surface water installations in southern Alberta. Thus far, samples from thirty-six sites have been submitted to the Dairy Laboratory in Edmonton. All tests indicate a negative response as regards herbicide and pesticide pollution. Sampling will be continued on a six-month schedule.

Soil and Water Laboratory

Installation of additional equipment in the laboratory facilitated work on various problems involved in the groundwater exploration and development program as well as the testing of base material for concrete lining purposes.

The majority of analysis continued to be salinity work related to soil drainage and classification investigations.

Other Services and Activities

Branch staff acted as resource personnel in extension work on TV programs and Short Courses.

Inspection and legitimizing of seepage damage claims in irrigated areas continues to be an important function of professional staff.

STATISTICAL SUMMARY — 1966

A. Professional

I. Soils Investigations for Irrigable Land Classification	
1. Major Investigations (Involving technical field work)	8
Parcels (160 acres)	1,139
II. Drainage Investigations	
1. Major Investigations (Involving technical field work)	
(Quarter sections)	72
Parcels	511
III. Miscellaneous Investigations (Involving technical field work)	
1. Farm storage reservoirs	64
2. Land development	22
3. Groundwater development	14
4. Root cellar drainage	1

B. Technical

(Work contributing to functions and reports of professional Staff)

I. Field	
1. Groundwater installations	
a. Existing to November 30th, 1965	2,619
b. New to November 30th, 1966	601
c. Readings	21,786
2. Soil and water samples taken in the field	12,380
3. Number of groundwater recorders (automatic)	6
4. Drain flow measurement	1,104

AGROHYDROLOGY BRANCH

Irrigation Gauge

Precipitation during the 1966 growing season resulted in a reduction in the use of water by farmers for irrigation of crops. The Irrigation Gauge operated during the season and, in general, rainfall occurred at times when such was indicated necessary by the Irrigation Gauge. The latter part of the growing season required additional water by irrigation and those subscribing to the gauge service indicated the benefit of the information in providing an awareness of proper timing for the application of irrigation water.

The interest in the irrigation gauge continues to grow with an increase in subscribers from the 1965 to 1966 growing season.

The number of subscribers using this service in the Brooks-Strathmore area tripled during this period. The major users were those growing seed peas for commercial production.

The number of Irrigation Gauge subscribers in the Edmonton area also increased, the major users being those commercial potato growers who used sprinkler irrigation to supplement natural precipitation.

The service has the continued support of the various news media, e.g. — newspapers, radio and television, throughout southern Alberta, and in one instance subscriptions were offered by a sprinkler dealer to those purchasing equipment.

Field samplings and laboratory analyses were made at numerous locations throughout the province to determine bulk densities and water holding capacities for various major soils series. These determinations will provide the irrigation farmer, irrigation planners and designers, and people studying watershed and hydrologic features of various areas of the province, with information relative to intake, storage and retention of natural waters.

The study of sprinkler irrigations in conjunction with the Irrigation Gauge is continuing in co-operation with the Aluminum Company of Canada at sites in the Brooks, Okotoks, Edmonton and Lethbridge areas. The study will be analyzed for overall costs and benefits of the gauge and sprinkler irrigation to the farm operation in these locations.

Irrigation Gauge

1. Number of district recording stations	35
2. Number of weekly records compiled	400
3. Soil moisture tests:	
Number of sites	641
Number of samples	2,906
4. Water holding capacity:	
Number of sites	380
Number of samples	1,756
Analysis	1,990

Farm Irrigation Evaluation

The Agrohydrology Branch conducted evaluation tests of various irrigation methods and systems in the irrigation areas of Alberta. The major objective of these tests was to provide additional information for design personnel with regard to proper system dimensions, time operations and capacities. The tests were made on border dyke irrigation systems and the data used for adjusting past system design recommendations and for use in obtaining thesis data.

During the summer of 1966, on-the-farm tests were made on 21 separate sprinkler systems in the main irrigated areas of the

south. The tests included pressure readings at various points throughout the system as well as moisture tin measurements to determine exactly how much water was being applied and where it was going. The results of these tests would seem to indicate that much more work could be done in this area. There is a need for more education to show the farmer what happens when a system is not properly designed or when the pressure is allowed to drop below the recommended level.

In general, the efficiency of sprinklers and border dykes could be improved by a few simple pointers on operation and alterations that would not increase the cost of the system to any great extent.

Farm Water Conservation

Work of the Agrohydrology Branch was extended outside the irrigated areas of southern Alberta during 1966. Farmers requesting help with irrigation or water conservation were visited in areas around Coronation, Vermilion, Altario, Edmonton, Barrhead, Grande Prairie, Fairview, Peace River and Fort Vermilion.

As a result of the demand for this type of service in the northern and central parts of the province, it was decided to locate technicians in Edmonton and Grande Prairie. These men serviced the surrounding district, providing information on irrigation, including timing, cost of operation and equipment, soils and topography and water suitability for irrigation. Field surveys and designs for land leveling and individual farm drainage were conducted in the Peace River country.

Another aspect of the work in northern and central regions was the collecting of agro-meteorological data and relating these to the consumptive use of crops grown in the region. This, together with soil testing of infiltration and water holding capacities provided the necessary information for moisture deficits for the various crops. Rain gauges and evaporimeters were established at strategic locations and most of these were read on a daily or weekly basis by the co-operating farmer. Since there was a lack of laboratory and office facilities in these areas, the work was closely co-ordinated with the District Agricultrists as well as University and Research Station personnel.

LAND MANAGEMENT BRANCH

Advisory Committees

The committees met on two occasions to discuss arrears of contracts and advise on future land disposition. A final hearing on the injuncted case recommended that insufficient evidence was amassed to cancel the agreement. The new land policy will be submitted to the Executive Council early in the new year. There are numerous requests for land lease and purchase agreements, however, the remaining parcels are few and scattered.

Land Tenure

TABLE I
S.M.R.D., B.R.D. and HAYS

	1951 to 1961	1962	1963	1964	1965	1966
Settlers established	275	288	293	298	300	303
Quitclaimed, Withdrawals, Cancelled	29	32	38	46	56	58
Total Number of Purchase Agreements	318	349	362	379	385	388
Agreements paid up	48	72	85	109	127	149
Active Agreements	241	245	239	224	201	182
Additional parcels allotted	19	36	43	56	62	62
Parcels of Land remaining unsettled	109 (*55-CP)	99 (*62-CP)	90 (*53-CP)	80 (*53-CP)	86 (*48-CP)	99 (*31-CP)
Number of Parcels of Land leased	154	112	110	97	110	99

* CP refers to lands reserved for community pasture development.

ECONOMICS

Due to the increasing demand for services, the work load for 1966 was extremely heavy. The nature of involvement became broader and much more complex. In addition to the Land Settlement programs, the benefit-cost analysis for various resources projects in Southern Alberta was carried out by the staff, or in co-operation with other Divisions of the Department. However, this is expected to be handled by the Agricultural Economics Division in the future when the Departmental reorganization program is completed.

The following major programs were undertaken during the year:

Farm Business Reports, Irrigation Group — 1965

This is a joint extension program on Farm Business Analysis with the Agricultural Economics Division, and has been carried out since 1962. The number of participants during the past few years has increased. The main reason for the continuing activity and growth in this project is that the settlers are gradually becoming aware of the importance of farm business management, and also recognizing the value of the guidance being given by the Department staff; thus, more services of this nature are being requested.

The average farm investment for the group increased from \$51,230 to \$59,140. The size of business also showed an increase from 443 Productive Man Work Units to 492 Productive Man Work Units. Net farm income and labor earnings advanced to \$7,444 and \$4,487 from \$5,558 and \$3,239 respectively. This suggested that our settlers have made considerable progress over the past year. The following is a summary:

TABLE II
SETTLERS IN ARREARS — S.M.R.D.

Year	Land		Water Right	
	Number	Amount	Number	Amount
1960	118	\$ 95,706.83	67	\$12,091.79
1961	116	127,191.29	89	14,220.70
1962	106	138,983.72	84	18,133.75
1963	108	182,259.54	89	21,024.40
1964	93	215,846.65	77	22,200.24
1965	87	200,997.69	72	20,882.83
1966	74	160,959.51	59	14,928.23

SETTLERS IN ARREARS — B.R.D.

Year	Land		Water Right	
	Number	Amount	Number	Amount
1960	17	\$ 9,062.46	2	\$ 171.00
1961	41	24,763.14	9	676.72
1962	47	41,045.80	14	2,038.48
1963	55	61,238.24	26	4,763.56
1964	55	84,398.74	43	6,798.78
1965	52	91,772.21	50	10,291.13
1966	44	93,528.01	40	10,969.56

TABLE III
FARM BUSINESS ANALYSIS — 1965

Number of Settlers in Study	29	Irrigated Farms
Acreage:		
Total	563	
Cultivated	380	— 67%
Irrigable	182	— 32%
Farm Investment:	\$59,140.00	
Real Estate	\$30,102.00	
Equipment	13,394.00	
Livestock	8,769.00	
Feed and Supplies	6,875.00	
Productive Man Work Units on Farm:	492	
Crops	279	
Livestock	188	
Other	25	
Man Equivalents:	1.5	
Gross Operating Revenue:	\$16,022.00	
Total Expenses:	8,578.00	— 54%
Net Farm Income:	7,444.00	— 46%
Labor Earnings:	4,487.00	
Per Cent Return on Operator's Capital:	7.2%	
Operator's Net Worth:	\$51,621.00	
Change in Net Worth During Year + or —	+ 2,744.00	
Net Capital Ratio:	4.39:1	
Turnover of Total Farm Capital	4 years	
Total Annual Equipment Costs	\$4,267	Per Cult. Acre \$11.23
Fixed Costs	2,398	Per Cult. Acre 6.31
Operating Costs	1,869	Per Cult. Acre 4.92
Gross Crop Return:		
Conventional Crop Group	\$26.00	per crop acre
Specialty Crop Group	51.83	per crop acre
Gross Livestock Return	\$186.00	(cow -calf enterprise) per \$100 Feed

Farm Capital, Income and Expenses for Eighty-Three Colonization Settlers — 1964

The farm operations of eighty-three settlers in the St. Mary and Milk Rivers Development and the Bow River Development were again summarized and analyzed. A circular containing

the district average and the settler's own operations was sent to each individual for study. In general, 1964 was one of the highest income years ever enjoyed by our settlers. The building up of inventories was apparent, as well as capital growth in many areas.

Additional information, such as crop yield index and equipment cost analysis were included in the circular, which proved very useful to the settlers. The following is a summary:

TABLE IV
ACREAGE, CAPITAL INVESTMENT — 1964

	S.M.R.D.			B.R.D.
	Medicine Hat Seven Persons	Bow Island Grassy Lake	Taber	Enchant Lomond Travers
Farm Reported	33	19	10	20
Total Land Area (Acres)	373	406	337	652
Cropped	183	253	193	307
Grain	125	175	131	271
Specialty Crops	5	15	21	2
Hay	33	36	28	15
Pasture — Tame	20	27	13	19
Summerfallow	38	59	40	188
Pasture — Wild	111	65	65	125
Waste and Other	41	29	39	32
Irrigable	126	138	143	139
% of Land Area	34%	34%	42%	21%

	S.M.R.D.			B.R.D.
	Medicine Hat Seven Persons	Bow Island Grassy Lake	Taber	Enchant Lomond Travers
Farms Reported	34	18	10	20
Total Investment	35,725	38,742	44,156	41,895
Land	18,463	18,552	20,549	20,674
%	52%	48%	46%	49%
Building	2,448	2,939	3,035	2,348
%	7%	8%	7%	6%
Working Capital	14,814	17,251	20,572	18,873
%	41%	44%	47%	45%
Machinery & Equipment	7,119	8,757	10,491	10,423
%	20%	23%	24%	25%
Livestock	5,358	5,629	6,833	4,495
%	15%	14%	16%	11%
Grain and Feed	2,337	2,865	3,248	3,955
%	6%	7%	7%	9%
Capital Turnover (Years)	4.6	4.0	3.4	4.3

TABLE V
FARM INCOME AND LABOUR EARNINGS 1964

	S.M.R.D.			B.R.D.
	Medicine Hat Seven Persons	Bow Island Grassy Lake	Taber	Enchant Lomond Travers
Farms Reported	34	19	10	20
Receipts				
Crop Sales	\$3,432	\$4,939	\$ 8,469	\$6,333
Livestock Sales	2,879	2,431	2,653	2,353
Dairy Product Sales	315	554	41	102
Poultry and Product Sales	77	44	115	5
Miscellaneous Receipts	1,373	1,055	1,326	927
Total Cash Receipts	8,076	9,023	12,604	9,720
Less Livestock Purchases	980	604	1,209	1,374
Inventory Adjustment	+ 693	+1,362	+ 1,771	+1,330
Total Operating Revenue	\$7,789	\$9,781	\$13,166	\$9,676

Expenses

Feed Purchases	\$ 269	\$ 264	\$ 228	\$ 131
Farm Machinery Expenses	1,182	1,433	1,783	1,391
Rent and Share	82	238	391	373
General Farm Expenses	449	575	631	317
Seed and Fertilizer	390	583	863	425
Annual Expenses	801	936	1,001	903
Custom Work and Wages	281	731	1,180	582
Operating Payments	3,454	4,760	6,077	4,122
Add Depreciation	1,032	1,143	1,451	1,504
Total Operating Expenses	\$4,486	\$5,903	\$ 7,528	\$5,626
Net Farm Income	3,303	3,878	5,638	4,050
Deduct Interest on Investment at 5%	1,786	1,858	2,207	2,095
Add Operator's Perquisites	183	318	365	185
Labor Earnings	\$1,700	\$2,338	\$ 3,796	\$2,140

TABLE VI**CROP YIELD INDEX AND EQUIPMENT COST ANALYSIS**

	S.M.R.D.			B.R.D.
	Medicine Hat Seven Persons	Bow Island Grassy Lake	Taber	Enchant Lomond Travers
Farms Reported	33	19	10	20
Total Cultivated Area	221	312	233	495
Value of Crop Produced	5,923	7,189	9,547	7,874
Per Cultivated Acre	26.80	23.04	40.97	15.91
Value if Average Yields	—	—	—	—
Crop Yield Index — %	100	100	100	100
Total Equipment Investment	\$6,643	\$8,534	\$10,491	\$10,398
Per Cultivated Acre	\$30.06	\$27.35	\$ 45.03	\$ 21.01
Total Annual Equipment Cost	2,322	2,943	3,547	3,310
Overhead Cost	1,182	1,457	1,764	1,919
Operating Cost	1,140	1,486	1,783	1,391
Per Cultivated Acre	\$10.51	\$ 9.43	\$ 15.22	\$ 6.69
Overhead Cost	5.35	4.67	7.57	3.88
Operating Cost	5.16	4.76	7.65	2.81
Percentage:				
Overhead Cost	51%	50%	50%	58%
Operating Cost	49%	50%	50%	42%

Special Programs**1. Economic Analysis of Established Drainage Projects —
St. Mary and Milk Rivers Development**

This economic study was carried out in order that the benefits of reclaiming land damaged by seepage and poor drainage could be evaluated, and applied as a guide to future development.

Nine reclamation projects consisting of 260 acres of farm land from different areas of the St. Mary and Milk Rivers Development were selected for a general representation of the study. Farm visits were made to determine cropping patterns and yields. Of the 260 acres damaged, only 57 acres were in crops, with a nominal production valued at \$550.00. As a result of reclamation, 245 acres were returned to average production and crop programs were intensified. The total value of production for 1965 has substantially increased to \$16,285.00, thus resulting in a benefit-cost ratio of approximately 3:1. However, this ration could be much

higher considering the protection which has been given to the neighbouring land.

This report also provided the basic information for the "Drainage Study of the Eastern Irrigation District" for the Irrigation Policy Committee, which was completed during the year in co-operation with other Branches of the Department.

2. Economic Factors for Land Classification

It was proposed that the economic factors be integrated with the present land classification system. The land use intensity, the productivity, the marketing facilities, etc., should all be considered in land classification in the irrigation districts. However, the standards, the procedures and more details have to be established, and a workable formula designed. This program is scheduled for completion early next year.

3. Statistics

The statistical work has been limited to the collection of published data from the Dominion Bureau of Statistics, Provincial Statistics Agency, Irrigation Districts and a few other organizations. The purpose has been mainly to obtain enough information to have on hand for anyone requesting data of this type. This proved to be very worthwhile.

4. Extension

Considerable time was spent to attend and address meetings and Field Days. Economic charts and graphs regarding the settlement and farm business programs were used for display purposes at agricultural short courses and exhibitions.

WATER RIGHTS

Table VII shows the status of water right agreements covering all of the irrigable lands in the St. Mary and Milk Rivers Development and the Bow River Development Projects.

TABLE VII
WATER RIGHT AGREEMENTS

Year	S.M.R.D.			
	Active Agreements	Agreements Paid Up	Number in Arrears	Amount of Arrears
1960	1,275	197	671	\$107,798.62
1961	1,243	310	680	101,665.45
1962	1,203	388	719	110,397.03
1963	1,203	468	653	107,584.46
1964	1,154	552	741	105,392.90
1965	1,109	630	716	98,846.61
1966	1,053	780	657	89,433.44*

*Includes 101 Interim Water Right Agreements

B.R.D.

Year	Active Agreements	Agreements Paid Up	Number in Arrears	Amount of Arrears
1960	117	0	88	\$ 4,614.00
1961	120	12	131	8,762.91
1962	175	20	135	12,443.98
1963	237	26	174	18,217.72
1964	293	28	190	21,698.23
1965	319	40	217	29,774.16
1966	305	45	172	23,242.48

REVENUE

Table VIII shows the collections from land sales and water right agreements of the settlers only.

TABLE VIII
COLLECTIONS ON LAND SALE AND WATER RIGHT
AGREEMENTS

S.M.R.D.

	1963	1964	1965	1966
Land Sale	42,000.00	74,000.00	48,000.00	66,000.00
Water Right	127,000.00	113,000.00	119,000.00	112,000.00

B.R.D.

	1963	1964	1965	1966
Land Sale	16,000.00	13,000.00	9,000.00	36,000.00
Water Right	9,000.00	16,000.00	21,000.00	30,000.00

LETHBRIDGE NORTHERN COLONIZATION MANAGER

C. J. McAndrews — L.N.I.D. Colonization Manager

The land settlement portion of the Colonization Manager's business was completed in the year 1961.

Since 1954, financial assistance, given by way of loans to water users, has been limited to loans for sugar beet labour and hauling.

The total amount loaned in 1966 was \$155,600.00, as compared with \$190,000.00 in 1965 and \$207,592.20 in 1964. The Secretary-Treasurer of the Lethbridge Northern Irrigation District looked after the office work in connection with the loans and the District bore the total expense of this service. The money used to make the loans was borrowed from the Treasury Branch in Lethbridge.

The following schedule gives statistics for sugar beet crops on the Lethbridge Northern Irrigation District for the years 1960 to 1966 inclusive:

Year	No. of Growers	Acres Harvested	Tons Harvested	Tons per Acre	Sugar Content	Total Price Per ton
1960	462	12,918	155,976	12.07	16.3%	\$14.84
1961	458	12,298	147,666	12.01	15.3%	13.73*
1962	408	11,386	134,674	11.83	17.2%	21.26
1963	383	10,566	146,423	13.86	15.7%	17.75
1964	399	11,112	125,954	11.33	16.5%	15.89*
1965	363	9,500	110,222	11.60	15.4%	17.19*
1966	313	8,785	126,875	14.44	16.2% (Est.)	**

Note: * includes the subsidy

** initial payment was \$8.25. Total price will not be known until all of the sugar is sold.

Sugar beets was, of course, the main specialized irrigation crop on the district and has done more to help the water users to become successful farmers than any other crop. Other crops such as potatoes, peas, turnips, carrots, cabbages, beans, parsnips, strawberries, cucumbers, corn, mustard, gladioli, sunflowers and flax are also grown but no definite reports on these crops are presently available.

Feeding and marketing of livestock and poultry were again important and profitable branches of farming on the Lethbridge Northern Irrigation District.

DRAINAGE COMMITTEE

The Land Manager as Chairman, convened four meetings of this Committee during 1966.

All investigational reports were considered by the Committee, whose recommendations resulted in construction of lining, lateral relocations, deepening, tile drain and open drain as reported elsewhere.

The Committee considered many policy aspects of irrigation administration which resulted in suggested new procedures correspondence with Irrigation Districts, experimental works and experimental suggestions.

All drainage agreements and damage claims were reviewed and approved by the Committee.

IRRIGATION TECHNOLOGY COURSE

The Regional Director attended three meetings to advise on and discuss the implementation of this course, the prospective applicants, and the course content.

All indications are that the course will be valuable for training technicians to a high degree of proficiency.

DIVISION POLICY

Administrative personnel of the Division have formulated plans to discuss policy at regular meetings. No meetings were held in 1966 with combined staff in attendance.

DIVISION ACTIVITIES

L. J. McCracken attended a Water Resources conference in Denver as one of the representatives from the Department.

L. D. M. Sadler formed part of a recruiting team for Professional Agrologists and Engineers in eastern Canada.

L. D. M. Sadler and H. A. Kerr presented papers at the C.S.A.E. section of the A.I.C. conference at Winnipeg in June. Titles of the papers were, respectively,

"Canal Lining for Seepage Control in Alberta"

"Development of an Irrigation Budget"

The following papers, co-authored by C. J. McAndrews, Director, Division of Program Planning, and H. A. Kerr, were written on water pollution:

- (a) Water Pollution as Related to Agriculture — Presented at the Water Studies Institute Symposia on Water, University of Saskatchewan, Saskatoon.
- (b) The Impact of Water Pollution on Agriculture — Presented at the Canadian Council of Resource Ministers Conference, Montreal.

R. H. Schuler attended a Groundwater refresher course in Edmonton sponsored by the Research Council of Alberta.

J. W. Thiessen and R. J. Knight attended the Hydrology Seminar at the University of Saskatchewan, Saskatoon.

S. Noreika, L. B. Spiess, G. P. Hartman, and A. E. Pungor visited irrigation projects and the Research Station in Swift Current, Saskatchewan, regarding land development practices and procedures.

G. L. Steed attended the Evapotranspiration Seminar and American Society of Agricultural Engineers Water Meeting in Chicago.

EDUCATION LEAVE

L. J. McCracken was awarded a Master of Science degree in Irrigation from the University of Davis, California. The title of his dissertation was "Drainage Study of the Solano Irrigation District, California."

R. H. Schuler is attending the University of Alberta in Edmonton with the objective of obtaining a Master of Science degree in Soils.

EXTENSION

Education and promotional presentations, displays, demonstrations, tours and lectures were continued as in past years as a public service. Educational aid was organized through the Agricultural Extension Branch. The co-ordination, liaison, and working relations exhibited by the Extension staff were very much appreciated.

**REPORT OF THE BOARD OF TRUSTEES OF THE
SURPLUS WHEAT BOARD MONEY RECEIVED BY THE
GOVERNMENT OF THE PROVINCE OF ALBERTA FROM 1916-19
CANADIAN WHEAT BOARD**

MEMBERS

Honourable Harry E. Strom	— Minister of Agriculture	— Chairman
Dr. E. E. Ballantyne	— Deputy Minister of Agriculture	— Member
Hugh M. Thompson	— Olds, Alberta	— Member
Minot L. Stetson	— Edmonton, Alberta	— Member
H. W. Gaebel		— Secretary

A statement showing the Receipts and Expenditures is attached together with a statement of Assets and Liabilities.

During the year receipts were \$3,896.09, all of which was in payment of interest on investments.

Payments during the year amounted to \$2,720.00 and were made for the following: Scholarships and Bursaries awarded \$2,700.00, Meeting expenses \$20.00.

MEETING

A meeting of the Board of Trustees was held on August 24, 1966 and the Schedule of Scholarships and Bursaries to be awarded was approved for the ensuing year totalling \$3,850.00.

GENERAL

The Board has continued the policy of conserving the principal in the Trust Fund making all payments from income received on investments.

INVESTMENTS

Investments at the end of the twelve month period is as shown on the attached balance sheet.

**TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
BALANCE SHEET AS AT DECEMBER 31, 1966**

Current				ASSETS	
Bank Balance				\$ 7,845.52	
Accrued Interest Receivable				737.16	
					\$ 8,582.68
Investments				Par Value	Book Value
Gov't of Canada	3¼% Jan.	15/68	\$ 2,500.00	\$ 2,510.00	
Prov. of B.C.	3% Dec.	15/69	45,000.00	44,930.82	
Prov. of Sask.	5½% Feb.	15/82	5,000.00	4,971.83	
Ontario Hydro. Elec.	4½% Nov.	1/67	4,000.00	4,000.00	
Prov. of N.B.	3½% Apr.	1/67	45,000.00	44,993.46	
Prov. of Nfld.	3¼% June	1/76	4,000.00	3,956.48	
City of Calgary	3½% July	1/68	4,000.00	3,998.84	
				\$109,500.00	\$109,361.43
Total Investments - Book Value					\$109,361.43
Total Assets					\$117,944.11

LIABILITIES

Trust Fund, December 31, 1965	116,716.67
Add: Surplus for 1966	1,227.44
Total Liabilities	\$117,944.11

**TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
ACCRUED INTEREST RECEIVABLE AS AT DECEMBER 31, 1966**

Government of Canada Debentures			
\$2,500, 3%, January 15, 1978, 5½ months	\$	42.96	
Province of British Columbia Debentures			
\$45,000, 3%, December 15, 1969, ½ month		56.25	
Province of Saskatchewan Debentures			
\$5,000, 5½ %, February 15, 1982, 4½ months		103.13	
Ontario Hydro Electric Debentures			
\$4,000, 4½ %, November 1, 1967, 2 months		28.33	
Province of New Brunswick Debentures			
\$45,000, 3½ %, April 1, 1967, 3 months		393.75	
Province of Newfoundland Debentures			
\$4,000, 3½ %, June 1, 1976, 1 month		12.50	
City of Calgary Debentures			
\$4,000, 3½ %, July 1, 1968, 6 months		70.00	
Bank Interest			
November, 1966	\$75.96	@ 2%	\$ 12.49
December, 1966	71.71	@ 2%	12.18
			24.67
Add: Accumulation of Discount			
Accrued on Province of B.C. ....		.96	
Accrued on Province of Saskatchewan .....		.78	
Accrued on Province of N.B.		3.31	
Accrued on Province of Nfld. ....		.96	
Accrued on City of Calgary .....		.26	
Less: Amount of Premium			
Accrued on Government of Canada .....		.55	5.57
Net Earnings Accrued to December 31, 1966	\$		737.16

**TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
STATEMENT OF RECEIPTS AND PAYMENTS FOR THE
YEAR ENDED DECEMBER 31, 1966**

Bank Balance, January 1, 1966	\$	6,669.43	
Interest on \$ 2,500 Canada	\$	93.74	
Interest on 45,000 Province of B.C.		1,350.00	
Interest on 5,000 Province of Sask.		275.00	
Interest on 4,000 Ontario Hydro Electric		170.00	
Interest on 45,000 Province of N.B.		1,575.00	
Interest on 4,000 Province of Nfld.		150.00	
Interest on 4,000 City of Calgary		140.00	
Bank Balance		142.35	3,896.09
			\$ 10,565.52
Deduct Payments—			
Scholarships	—Fairview School	300.00	
	—Olds School	400.00	
	—University of Alberta	1,000.00	
	—Vermilion School	1,000.00	
Meeting Expense—H. Thompson	20.00		2,720.00
Bank Balance December 31, 1966	\$		7,845.52

